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ORIGINAL

**GEO DESIGN INC**

**SUPPLEMENTAL SOURCE CONTROL EVALUATION**

**Sulzer Pumps Facility**

2800 NW Front Avenue

Portland, Oregon

DEQ ECSI No. 1235

For

Sulzer Pumps (US) Inc.

June 29, 2007

GeoDesign Project: SulzerPump-1-09



June 29, 2007

Oregon Department of Environmental Quality  
Northwest Region  
2020 SW Fourth Avenue, Suite 400  
Portland, OR 97201

Attention: Mr. Mark Pugh

**Supplemental Source Control Evaluation**

Sulzer Pumps Facility  
2800 NW Front Avenue  
Portland, Oregon  
DEQ ECSI No. 1235  
GeoDesign Project: SulzerPump-1-09

GeoDesign, Inc. is pleased to submit this supplemental SCE for the Sulzer Pumps facility located at 2800 NW Front Avenue in Portland, Oregon. This report is intended to provide updated data from the catch basins and stormwater systems that discharge to the Willamette River at the Sulzer Pumps site.

If you have questions concerning this submittal, please call.

Sincerely,

GeoDesign, Inc.

A handwritten signature in black ink, appearing to read "Robert E. Belding".

Robert E. Belding, R.G.  
Principal Geologist

cc: Ms. Kati Babinec, Sulzer Pumps (US) Inc. (via email only)

SCN:REB:kt:kes

Attachments

Two copies submitted

Document ID: SulzerPump-1-09-062907-envr-SCE.doc

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## **TABLE OF CONTENTS**

	<b>PAGE NO.</b>
1.0 INTRODUCTION AND PURPOSE	1
2.0 BACKGROUND	1
3.0 PROPERTIES AND OPERATIONS	2
4.0 CATCH BASINS AND STORM DRAIN SYSTEM LAYOUT	2
5.0 SITE CONDITIONS	4
6.0 STORMWATER SAMPLING RESULTS	4
7.0 CONCLUSIONS AND RECOMMENDATIONS	5

## **FIGURES**

Vicinity Map	Figure 1
Site Plan	Figure 2
Parcel Plan	Figure 3
Project Site Photographs	Figures 4-8

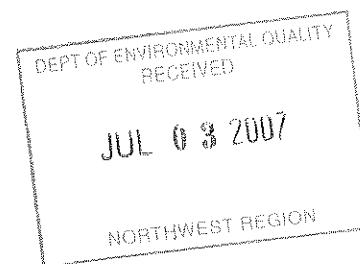
## **TABLES**

December 13, 2006 Catch Basin Observations	Table 1
December 13, 2006 Stormwater Sampling Analytical Results	Table 2
May 7, 2006 Stormwater Sampling Analytical Results	Table 3
October 31, 2005 Catch Basin Sediment Sampling	Table 4

## **APPENDICES**

- Appendix A
  - Disposal Receipt For Catch Basin Decommissioning
- Appendix B
  - Apex Laboratories Report

## **ACRONYMS**



## **1.0 INTRODUCTION AND PURPOSE**

This report is submitted by GeoDesign on behalf of Sulzer Pumps (US) Inc. (Sulzer) under guidance of the DEQ VCP and in response to DEQ comments to a draft SCP completed by GeoDesign for the Sulzer facility located at 2800 NW Front Avenue in Portland, Oregon (project site). The location and layout of the facility are presented on Figures 1 and 2. This report presents a summary of the remedial actions for the COIs detected in catch basins and storm drain systems at the project site, as well as additional stormwater sampling data and recent observations of site conditions. For your reference, definitions of all acronyms used are attached at the end of this document.

## **2.0 BACKGROUND**

In August 2002, Sulzer entered into a voluntary agreement with DEQ to conduct an XPA of the site. The primary purpose of the XPA was to identify potential contaminant sources on the upland portion of the project site that may have impacted Willamette River sediments and surface water or have the potential to impact Willamette River sediments or surface water in the future. In May 2004, GeoDesign submitted the results of the XPA in a report to DEQ. The results of the XPA indicated that media impacted in the upland portion of the project site included subsurface soil, groundwater, and catch basin sediments.

In November 2004, GeoDesign submitted a technical memorandum to DEQ that included a CSM, an evaluation of beneficial land and water uses, and the results of screening contaminant concentrations against risk-based human health and ecological criteria. In a letter from DEQ to Sulzer, dated December 23, 2004, DEQ requested re-screening the contaminants using values recently revised by DEQ. Contaminants were compared to revised screening criteria and presented in our letter report, dated August 1, 2005<sup>1</sup>. The CSM developed for the project site demonstrated that particulates on paved surfaces and catch basin sediments are the only potential source that may directly impact river sediment and that stormwater and groundwater discharges are the only potential sources that may directly impact river water. COIs exceeding one or more screening levels include metals and PAHs as described in the SCE.

Based on information provided by Sulzer personnel, operations at the sand blasting building were moved in March 2004 to a new sand blasting and painting area in an addition to the east end of the NE Operations Office building. The new area was constructed so that sand blast grit and debris could be contained in an enclosed space, thereby minimizing the potential for future impacts to stormwater.

In August 2005, GeoDesign submitted a draft SCE and SCP for the project site, and DEQ provided comments on September 8, 2005. Based on the comments provided by DEQ, GeoDesign incorporated updated screening levels for COIs at the facility. GeoDesign incorporated comments made for the SCP, and Sterling Technologies, LLC (Sterling) completed several field activities at the project site between September 2005 and June 2006, including site sweeping,

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<sup>1</sup> *Source Control Evaluation, Sulzer Pumps Facility, 2800 NW Front Avenue, Portland, Oregon, GeoDesign Project: SulzerPump-1-09, dated August 1, 2005.*

identifying storm drain lines, sampling catch basin sediments, cleaning catch basins, jetting storm drain lines, disposing of remedial wastes, and stormwater sampling during a rain event. The samples obtained by Sterling were submitted to an analytical laboratory for chemical testing. The analytical results from these activities were screened using screening levels and methods from DEQ's December 2005 Final Portland Harbor JSCS document.

DEQ provided comments to documentation related to the catch basin sediment and stormwater sampling event conducted in May 2006. DEQ requested additional clarification regarding the layout of the stormwater collection system. DEQ also requested that samples from the subsequent stormwater sampling be analyzed for additional chemicals related to the EPA/DEQ JSCS.

GeoDesign personnel conducted stormwater sampling activities at the project site on December 13, 2006. During these activities, the project site area and catch basin conditions were documented. Stormwater samples were collected and analyzed for additional chemical analytes (including phthalates, PAHs, TAL metals, and PCBs), as requested by DEQ.

### **3.0 PROPERTIES AND OPERATIONS**

The project site is divided into three different parcels, as depicted on Figure 3. The westernmost parcel is Tax Lot 600, and including the Parcel 2 portion adjacent to the Willamette River, is 12.14 acres in size. This land is owned by Sulzer and is currently occupied by the Sulzer manufacturing facility. It is our understanding that the purchase of the Parcel 2 portion of Tax Lot 600 by Dolan Design (Dolan) is pending. The parcel immediately adjacent to the east (Parcel 1, tax lot 800, address 2700 NW Front Avenue) is currently owned by Dolan and is 11.83 acres in size. The Dolan parcel is occupied by a large warehouse building, two large buildings further east (which are scheduled for demolition in 2007) and paved and unpaved parking areas. Following the demolition of the two large buildings, we understand that current development plans include the construction of a 200,000-square-foot warehouse facility. In addition, the site grade will be raised and new stormwater conveyance systems will be constructed.

The current operations at Sulzer include the testing and finishing of pumps and pump components. Most operations are conducted within the structures of the facility. Some storage of materials is outdoors, but is limited to very large piping and pump components. The operations at Dolan include warehousing and shipping/trucking. Manufacturing does not occur at the Dolan property.

### **4.0 CATCH BASINS AND STORM DRAIN SYSTEM LAYOUT**

Based on the site SWPCP prepared by Bergeson Boese & Associates, field observation, previous investigations, and plans provided by CIDA Architects, the project site stormwater is collected by catch basins in six drainage areas, which lead to eight point-source discharges (designated Outfalls A through E, numbers 6 and 7, and City Outfall 15). Two non-point discharge drainage areas located adjacent to the Willamette River are on the northern portion of the project site. Based on our review of the SWPCP, the site as-built drawings provided by Sulzer, our site reconnaissance, the December 2005 catch basin clean out and sampling activities, the April

2006 storm drain survey, the May 2006 geophysical survey completed by Sterling, building plans for the Dolan area modification provided by CIDA Architects, and maps and cross sections from the City of Portland Department of Public Works, the City Outfalls and the storm and sanitary systems on the project site are located at elevations between 20 and 26 feet ASL. The catch basin elevations (surface of the project site) are generally between 30 and 31 feet ASL. Based on this information, the storm and sanitary conveyances are located at depths of approximately 4 to 11 feet BGS. Previous investigations indicate that groundwater was encountered at depths greater than 20 feet BGS. This indicates that these conveyances do not likely present a preferential pathway for groundwater to migrate.

The system is divided into different drainage basins (A, B, C, D, E, F). The layout of the drainage basins is shown on Figure 2 and described below. Drainage basin A includes catch basins CB-4, CB-M5, CB-7, CB-8, CB-M4, CB-M6, CB-M8, and CB-M9. These catch basins are connected to a sanitary sewer line at the northwest portion of the project site along NW Front Avenue. Drainage basin A discharges via Outfall A to a City of Portland CSO that leads to the Columbia Boulevard Wastewater Treatment Plant. As noted by DEQ, high precipitation events can lead to overflow conditions, resulting in potential discharges to the Willamette River.

Drainage basin B includes catch basins CB-9 through CB-21. Catch basins CB-18 through CB-20, located in the roadway where the former warehouse and office building were located, discharge to a vault at storm drain SD-2, which includes stormwater filtration units, and then routes into Outfall B. The Outfall B pipe also drains non-contact cooling water from the substation 2 area. This stormwater discharges to the Willamette River at Outfall B.

Drainage basin C includes catch basins CB-3, CB-41, CB-49, CB-M3, CB-30, and CB-31, and discharges to the Willamette River via Outfall C.

Drainage basin D includes two 6-inch-wide trench drains and two associated cart catch basins (CB-42 and CB-43) located at the truck loading docks at the Dolan facility. These drain to a storm vault which then pumps stormwater to Outfall D, which also drains catch basins CB-38, CB-39, CB-40, and CB-5. Outfall D discharges to the Willamette River. Catch basins CB-34 through CB-37 are within the Dolan area and flow to a sanitary vault, which then flows to the forced main sanitary sewer line. Catch basins CB-32 and CB-33, located in the parking area along NW Front Avenue, also flow into the forced main. The forced main flows in the City CSO that leads to the Columbia Boulevard Wastewater Treatment Plant. Catch basins CB-M1, CB-M2, and CB-47 do not flow and, based on old building plans, were likely connected to the sanitary system. A geophysical survey was completed during the cleanout activities in this area, and dry wells and piping to outfalls were not observed. Catch basins CB-M1, CB-M2, and CB-47 were cleaned of sediment and then decommissioned on June 7, 2007.

Drainage basin E includes catch basins CB-14 and CB-15 and discharges to Outfall E, which discharges to the Willamette River. The roof drains from the storage buildings in that area currently drain to Outfall 2. These two buildings will be demolished in the future, and associated drain lines removed.

Drainage basin F includes catch basins CB-16 and CB-17, which drain to City of Portland Outfall 15, which in turn discharges to the Willamette River.

Catch basin CB-1 was connected to a 4- to 6-inch-diameter, metal pipe described as Outfall 7, which leads to the Willamette River. Catch basin CB-6 located in the NPS area adjacent to the Willamette River flows to Outfall 6. Catch basin CB-48 was determined not to flow. Catch basins CB-1, CB-6, and CB-48 were also cleaned and decommissioned on June 7, 2007. The drainage basins, catch basin locations, and approximate locations of storm drain lines are shown on Figure 2. Documentation regarding the disposal of catch basin solids and cleanout water is presented in Appendix A.

## 5.0 SITE CONDITIONS

The catch basin conditions, including the type of construction (where determinable), amount of sediment, and catch basin dimensions, were noted during the sampling activities. Area conditions were observed and documented, including the surface and condition of the surface.

The areas surrounding the catch basins are paved, with the exception of catch basins CB-8 and CB-7 at the northeast corner and northwest corners of the NE Operations Office, respectively, which are in graveled areas. Catch basins CB-14, CB-16, and CB-17 on the Dolan property are also located in graveled areas. Catch basin CB-8 was observed to have a bio-filter bag at the up-gradient side.

During the December 2006 sampling activities, as well as the June 2007 catch basin decommissioning activities, the paved and graveled areas of the project site were generally free of debris. Storage, parking, and traveled areas appeared generally clean and in order. Catch basins that had been cleaned in February 2006 were observed to have minimal amounts of sediment in them during the December 2006 stormwater sampling event and the June 2007 site visit. The catch basin details from December 2006 are summarized in Table 1. Site photographs are presented on Figures 4 through 8.

## 6.0 STORMWATER SAMPLING RESULTS

GeoDesign conducted stormwater sampling at the project site during a rainfall event on December 13, 2006. Nine stormwater samples (CB-4, Dolan Vault, SD-2, Outfall C, CB-5, CB-15, CB-6, CB-1, and CB-16) were collected for Outfalls A, B, C, D, E, 6, 7, and City Outfall 15. Stormwater samples were submitted to Apex Labs of Tigard, Oregon, and Environmental Science Corp. of Juliet, Tennessee (via Apex Labs), and analyzed for total TAL metals by EPA Method 6020; pH by EPA Method 6020; TSS by EPA Method 160.2; oil and grease by EPA Method 1664A; PCBs by EPA Method 8082; phthalates by EPA Method 8270C; and PAHs by EPA Method 8270C-SIM.

Analytical results were compared to the JSCS SLVs for stormwater. Outfall A was sampled at CB-4 prior to where the sanitary line is routed into Outfall A. Aluminum, cadmium, copper, lead, manganese, silver, and zinc were detected at concentrations greater than one or more of the

SLVs. Bis (2-ethylhexyl) phthalate was also detected greater than the SLV in sample CB-4. PCBs and PAHs were not detected above laboratory method detection limits in sample CB-4.

In the stormwater samples collected from the remaining outfalls, the only metals detected above SLVs were lead, copper, manganese, and zinc. Bis (2-ethylhexyl) phthalate was detected above the SLVs in the Dolan Vault sample, and diethyl phthalate was detected slightly above the ecological receptor screening level in the sample collected from Outfall 6. PCBs, oil and grease, and PAHs were not detected above SLVs, and in most cases were not detected above laboratory method reporting limits. The December 2006 stormwater sampling results are presented in Table 2.

Analytical results of the stormwater samples collected by Sterling during the May 7, 2006 sampling event were also compared to the JSCS SLVs. Lead and zinc exceeded SLVs in six samples, and copper exceeded the ecological SLV in one sample. Phenanthrene exceeded the MCL in two stormwater samples (CB-1 and CB-6). No other SLV exceedences were noted in stormwater sample analytical results. The stormwater sampling results from the May 7, 2006 sampling event are presented in Table 3.

Composite sediment sample analytical results from the October 31, 2005 sampling event completed by Sterling were compared to JSCS sediment SLVs. Only sediment collected from catch basin CB-5 as a discrete sample exceeded the SLVs for several PAHs. No other SLV exceedences were noted in sediment sample analytical results. The catch basin sediment samples were composited from multiple drainage basins. The sediment data and associated drainage basin information is provided in Table 4.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

Stormwater sampling results from the last two events were compared to JSCS SLVs. The PAH phenanthrene very slightly exceeded the SLV in two samples collected during the May 2006 sampling event. These two samples were collected from catch basins CB-1 and CB-6, which formerly drained into Outfalls 7 and 6, respectively. Analytical results from the December 2006 sampling event indicate that phenanthrene was not detected above the laboratory method reporting limit in samples collected from CB-1 and CB-6. These two catch basins have been decommissioned and no longer present a potential source of impact. No detected concentrations of PAHs exceeded the SLVs in stormwater during the December 2006 event. Phthalates were detected slightly above SLVs in Outfall A, which discharges to the sanitary sewer system. Phthalates were also detected slightly above the SLVs in the Dolan Vault sample, but were not detected above the SLVs in the sample collected from CB-5, located down gradient in drainage basin D from the Dolan Vault. Lead and zinc slightly exceeded the SLVs in both May and December 2006 stormwater sampling events. PCBs and oil and grease were not detected above laboratory method reporting limits during the December 2006 stormwater sampling event.

The current stormwater conveyance system includes drainage basins A and B (Sulzer) and drainage basins C, D, E, and F (Dolan). The results of the sampling activities indicate that ongoing BMPs appear to be protective. It is our recommendation that Sulzer and Dolan begin

*zinc exceeds SLV by 10  
in several samples*

dialogue to determine the responsibilities of the future sampling and periodic maintenance based on the drainage basin layout. In addition, the stormwater conveyance systems should continue to be jetted and cleaned on an annual basis with the solids and liquids separated and sampled for chemical analysis. The next cleaning and jetting should occur within the 2007 calendar year. The catch basins and stormwater conveyance lines should be inspected for sediment buildup quarterly and documented for submittal with future stormwater monitoring reports. The next stormwater sampling event will likely occur in early fall 2007 at the beginning of the rainy season. The chemical analytical program shall follow the program completed during the December 2006 sampling event. It is our professional opinion that the number of total metals to be analyzed could be reduced to include aluminum, cadmium, copper, lead, manganese, silver, and zinc.

*based on what?*

The following analytical tests will be required for the remainder of the SCE stormwater and catch basin solids sampling activities:

Stormwater:

- pH by EPA Method 150.1/9040A
- TSS by EPA Method 160.2
- Diesel- and heavy oil-range petroleum hydrocarbons by Method NWTPH-Dx
- Total oil and grease by EPA Method 1664
- Total metals including aluminum, cadmium, copper, lead, manganese, mercury, silver, and zinc by EPA 6000/7000 Series Method
- PAHs and phthalates (low Level) by EPA Method 8270C
- PCBs by EPA Method 8082

Catch basin sediments:

- Total metals for aluminum, cadmium, copper, lead, manganese, mercury, silver, and zinc by EPA 6000/7000 Series Method
- PAHs and phthalates (low level) by EPA Method 8270C
- PCBs by EPA Method 8082
- TOC by EPA Method 415.1
- Grain-size analysis by ASTM C136

♦ ♦ ♦

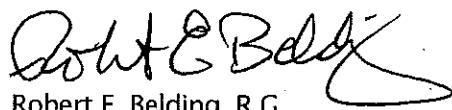
Please call if you have questions regarding this submittal.

Sincerely,

GeoDesign, Inc.

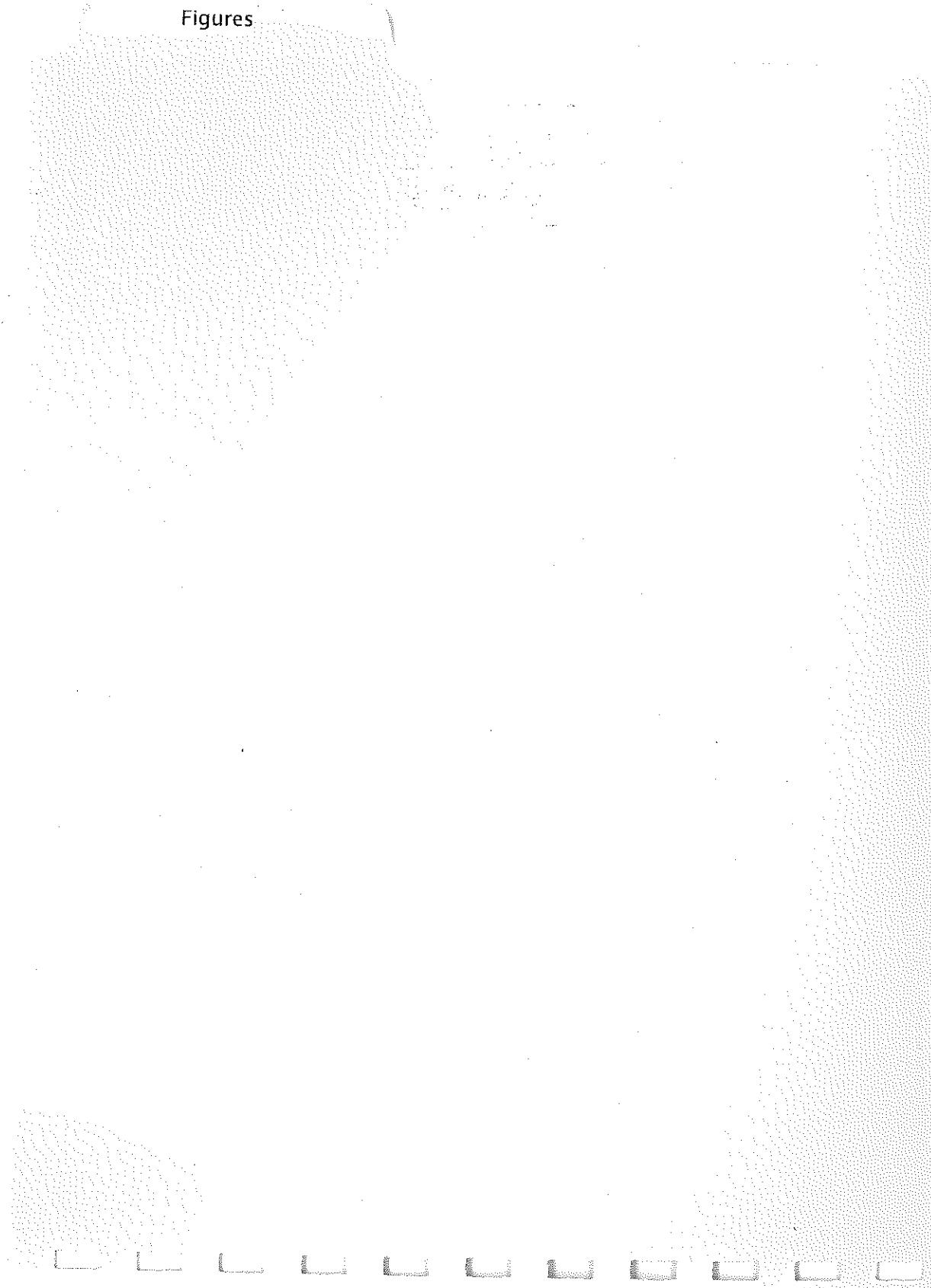


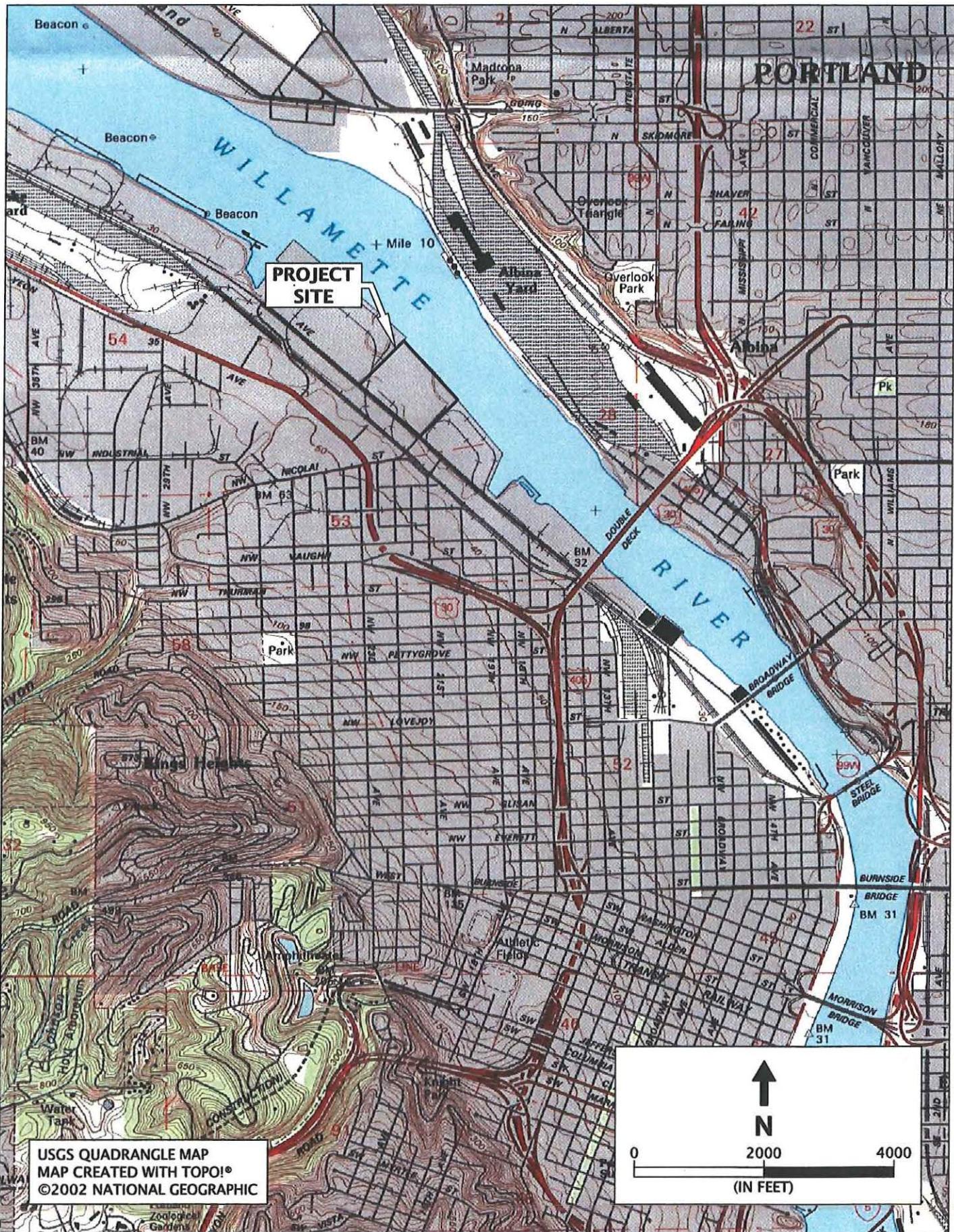
Stephen C. Nelson  
Project Manager



Robert E. Belding, R.G.  
Principal Geologist

## Figures





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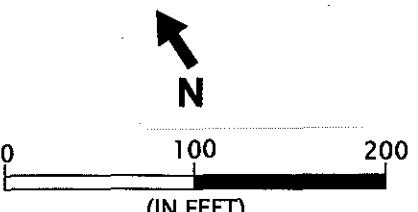
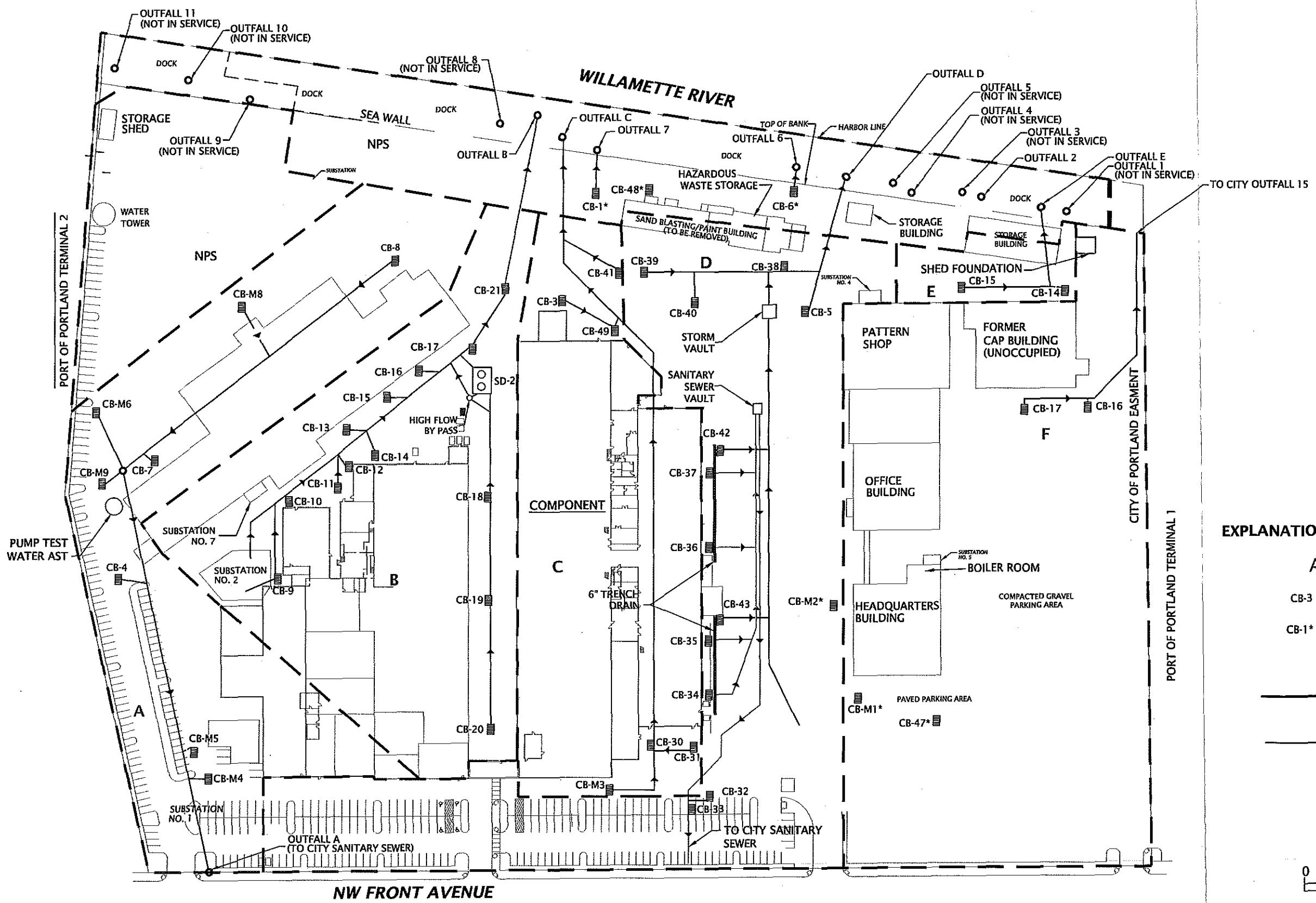
SULZERPUMP-1-09

VICINITY MAP

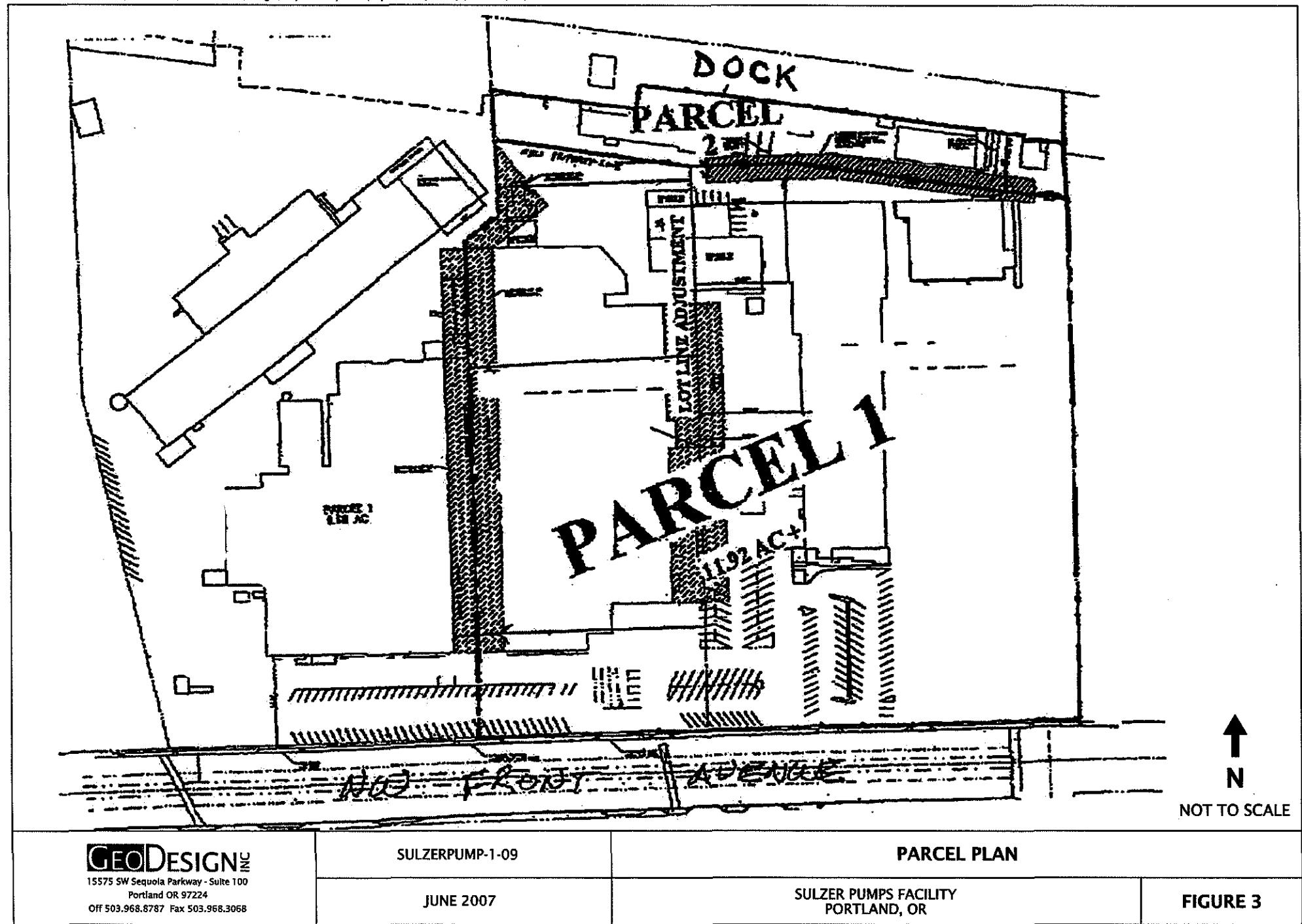
JUNE 2007

SULZER PUMPS FACILITY  
PORTLAND, OR

FIGURE 1



SITE PLAN BASED ON DRAWING PROVIDED BY GROUP MACKENZIE





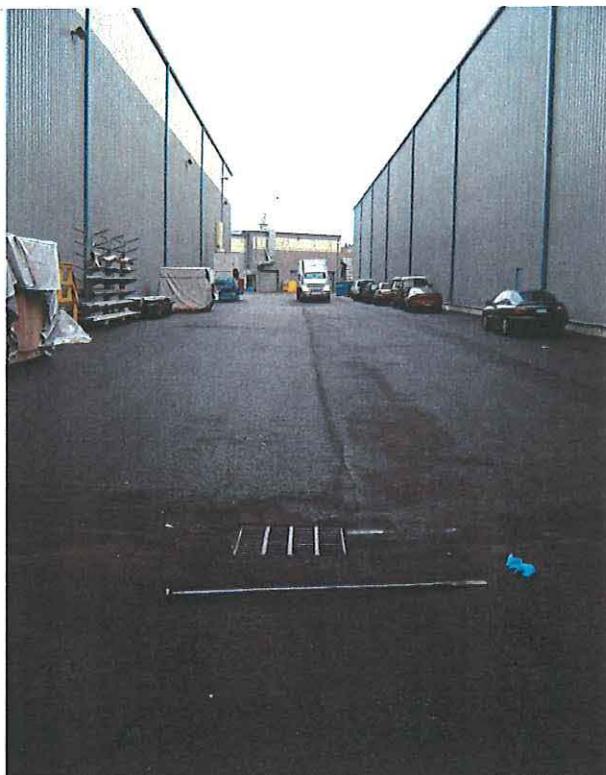
CATCH BASIN CB-8 IN DRAINAGE BASIN A. PHOTOGRAPH TAKEN FACING NORTHWEST.



CATCH BASIN CB-M8 IN DRAINAGE BASIN A. PHOTOGRAPH TAKEN FACING EAST.



DRAINAGE BASIN B WITH CATCH BASIN CB-16 AND STORM DRAIN SD-2 VISIBLE.  
PHOTOGRAPH TAKEN FACING EAST.



CATCH BASIN CB-20 IN DRAINAGE BASIN C.  
PHOTOGRAPH TAKEN FACING NORTHEAST.



DOLAN TRUCK LOADING DOCKS. PHOTOGRAPH TAKEN FACING NORTHEAST.



STORM VAULT ON DRAINAGE BASIN D. PHOTOGRAPH TAKEN FACING NORTH.



TRENCH DRAIN ON DOLAN PROPERTY DRAINAGE BASIN D. PHOTOGRAPH TAKEN FACING NORTHEAST.



CATCH BASIN CB-14 IN DRAINAGE BASIN E. PHOTOGRAPH TAKEN FACING SOUTHEAST.



CATCH BASIN CB-17 IN DRAINAGE BASIN F. PHOTOGRAPH TAKEN FACING NORTHWEST.

## Tables



**TABLE 1**  
**Summary of December 13, 2006 Catch Basin Observations**  
**Sulzer Pumps Facility**  
**2800 NW Front Avenue**  
**Portland, Oregon**

Catch Basin I.D. <sup>1</sup>	Dimensions length x width x depth (feet)	Construction	Sediment Depth (feet)	Sediment Volume (cubic feet)	Surrounding Area
<b>Sulzer</b>					
CB-1*	2 diameter	plugged	0	0	asphalt
CB-4	1 x 2.5 x 2	concrete bottom	0.25	0.625	asphalt
CB-M4	(access)	concrete bottom	0	0	asphalt
CB-M5	1 diameter 2 deep	metal bottom	0.02	0.02	asphalt
CB-M6	2 x 2 x 2		0.04	0.16	gravel
CB-6*	2 x 2 x 2	metal bottom	0.25	1	asphalt
CB-7	5 x 5 x?		ND	ND	gravel
CB-M9	2.5 x 2.5 x 2	metal bottom	0	0	asphalt
CB-8	1 x 2 x 3	concrete bottom	0.04	0.08	gravel
CB-M8	2 x 2 x 2.5 deep		0.02	0.08	asphalt
CB-9	3 x 3 x 3	concrete bottom	0	0	asphalt
CB-10	2 x 2 x 2.5	concrete bottom	0.04	0.16	asphalt
CB-11	2 x 3 x 2	concrete bottom	0	0	asphalt
CB-12	1 diameter 2 deep		0	0	asphalt
CB-13	1 x 2.5 x 1	metal bottom	0	0	asphalt
CB-14	1 diameter 2.5 deep		0.15	0.12	asphalt
CB-15	1 x 2.5 x 1	metal bottom	0.08	0.2	asphalt
CB-16	1 x 2.5 x 1	metal bottom	0	0	asphalt
CB-18	2 x 2 x 3.5		0	0	asphalt
CB-19	2 x 2 x 3		0.04	0.17	asphalt
CB-20	2 x 2 x 5		0.13	0.52	asphalt
CB-21	1.5 diameter	metal bottom	0	0	asphalt
CB-48*	1 x 1 x 2.5	metal bottom	0.25	0.25	asphalt
<b>Dolan</b>					
CB-3	1 x 3 x 4	concrete	0.04	0.12	asphalt
CB-5	4 x 4 x?	unknown	ND	ND	asphalt
CB-41	2 x 2 x 2	concrete	0	0	asphalt
CB-14	2 x 2 x 2.5	concrete	0.02	0.08	gravel
CB-15	2 x 2 x 3	concrete	0.02	0.08	asphalt
CB-16	2 x 2 x 2	concrete	0.02	0.08	gravel
CB-17	2 x 2 x 2	concrete	0.02	0.08	gravel
CB-30	2 x 2 x 2.5	concrete	0.02	0.08	asphalt
CB-31	2 x 2 x 2.5	concrete	0.02	0.08	asphalt
CB-32	1.5 x 1.5 x 1.5	concrete	0.1	0.23	asphalt
CB-33	1 diameter 2.5 deep	concrete	0.02	0.02	asphalt
CB-34	2 x 2	metal bottom	ND	ND	asphalt
CB-35	2 x 2	metal bottom	ND	ND	asphalt
CB-36	2 x 2	metal bottom	ND	ND	asphalt
CB-37	2 x 2	metal bottom	ND	ND	asphalt
CB-38	2 x 2 x 4	metal bottom	0	0	asphalt
CB-39	2 x 2 x 4	metal bottom	0	0	asphalt
CB-40	2 x 2 x 4	metal bottom	0.25	0.08	asphalt
CB-49	1 diameter 2.5 deep	metal bottom	0.08	0.06	asphalt
CB-M1*	1 x 2 x 2	not connected	0	0	asphalt
CB-M2*	1 x 2 x 2	not connected	0	0	asphalt
CB-47*	2 x 2 x 2	not connected	0.02	0.08	asphalt
CB-M3	1.5 diameter 3 deep		0.02	0.04	asphalt

Notes:

1. catch basin I.D.s revised

\* catch basin decommissioned on June 7, 2007

ND: not determined

total

TABLE 2  
December 13, 2006 Stormwater Sampling Analytical Results<sup>1</sup>  
Sulzer Pumps Facility  
2800 NW Front Avenue  
Portland, Oregon

17591 day

Outfall	Outfall A	Dolan Vault	Outfall B	Outfall C	Outfall D	Outfall E	Outfall 6	Outfall 7	City Outfall 15	Human Health Screening Levels		Ecological Receptor Screening Level <sup>3</sup>	
										Fish	Drinking Water		
										Consumption <sup>2</sup>	MCL		
<b>Sample Collection Location</b>	CB-4	Dolan Vault	SD-2	Outfall C	CB-5	CB-15	CB-6	CB-1	CB-16				
<b>Total Metals by EPA Method 200 Series (mg/L)</b>													
Aluminum	0.77	0.16	0.16	ND<0.10	ND<0.10	0.24	0.16	0.21	2.3	--	0.05-0.2	36	0.087
Antimony	0.00187	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.64	0.006	0.015	1.6
Barium	0.021	0.00844	0.00392	0.0126	0.014	0.0361	0.0125	0.0107	0.0563	--	1	2.6	--
Beryllium	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	1.17 E-03	--	0.073	0.0053
Cadmium	0.0015	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	--	0.005	0.018	0.00038
Calcium	2.1	1.2	1.2	3.5	1.4	4.3	2.5	1.5	3.9	--	--	--	--
Chromium	0.0034	0.00169	0.00108	ND<0.001	ND<0.001	0.0016	0.00267	0.00329	0.00318	3,433	0.1	55	0.21
Cobalt	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	0.73	--
Copper	0.017	ND<0.0050	ND<0.0050	0.00684	0.00875	0.0137	0.00708	0.0074	0.0074	--	1.300	1.5	0.0036
Iron	1.6	0.17	0.31	0.13	ND<0.10	0.82	0.38	1.4	3.4	--	--	11	--
Lead	ECD MCL	0.0376	0.00142	0.00108	0.00138	0.00108	0.003	0.00538	0.00426	0.00743	--	0.015	--
Magnesium	0.43	0.18	0.11	0.84	0.28	0.62	0.28	0.22	1.3	17591 day	--	--	--
Manganese	0.083	0.0217	0.00933	0.0463	0.0138	0.0456	0.0397	0.0544	0.093	0.010	0.050	0.88	0.12
Mercury DE > HH FG	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	0.000146	0.002	0.011	0.00077
Molybdenum	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	0.18	--
Nickel	0.00456	0.00101	ND<0.001	0.00159	0.00217	0.0036	0.00244	0.00458	0.00217	4,600	--	0.73	0.016
Potassium	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.58	ND<0.50	0.64	0.95	--	--	--	--
Selenium	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	4,200	0.050	0.18	0.005
Silver	0.00724	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	--	0.100	0.18	0.00012
Sodium	1.6	1.6	ND<0.50	6.9	2.2	3.9	1.7	1.2	2.6	--	--	--	--
Thallium	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.048	--	0.0024	--
Vanadium	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	0.036	--
Zinc	0.153	0.406	0.0483	0.568	0.194	0.227	0.458	0.098	0.0239	26	5.0	11	0.036
pH (6020)	6.46	6.67	6.78	6.42	6.22	6.56	5.19	6.50	6.84	--	--	--	--
TSS by EPA Method 160.2 (mg/L)	23	ND<5.0	ND<5.0	ND<5.0	ND<5.0	5.0	ND<5.0	9.0	15.0	--	--	--	--
Oil and Grease by EPA Method 1664A (mg/L)	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	--	--	--
Diesel-Range Hydrocarbons by Method NWTPH-Dx (mg/L)	ND<0.250	ND<0.250	ND<0.250	ND<0.250	0.329	ND<0.250	ND<0.250	0.402	ND<0.250	--	--	--	--
Heavy Oil-Range Hydrocarbons by Method NWTPH-Dx (mg/L)	0.703	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<0.500	--	--	--	--
<b>PCBs by EPA Method 8082 * (µg/L)</b>													
PCB 1016	ND<0.077	ND<0.077	ND<0.077	ND<0.077	ND<0.077	ND<0.077	ND<0.077	ND<0.077	ND<0.077	--	--	0.96	--
PCB 1221	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	--	--	--	0.28
PCB 1232	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	--	--	--	0.58
PCB 1242	ND<0.099	ND<0.099	ND<0.099	ND<0.099	ND<0.099	ND<0.099	ND<0.099	ND<0.099	ND<0.099	--	--	--	0.053
PCB 1248	ND<0.039	ND<0.039	ND<0.039	ND<0.039	ND<0.039	ND<0.039	ND<0.039	ND<0.039	ND<0.039	--	--	--	0.081
PCB 1254	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	--	--	0.034	0.033
PCB 1260	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	ND<0.16	--	--	--	94
<b>Phthalates by EPA Method 8270C (µg/L)</b>													
Total Phthalates	ND<60	9.9	ND<6.0	--	--	--	--						
Bis (2-ethylhexyl) phthalate	11	8.9	2.2	ND<1.0	1.5	ND<1.0	1.9	ND<1.0	1.4	2.2	6	4.8	3
Benzylbutyl phthalate	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1,900	--	7,300	3
Diethyl phthalate	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	3.8	ND<1.0	ND<1.0	44,000	--	29,000	3
Dimethyl phthalate	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1,000,000	--	360,000	3
Di-n-butyl phthalate	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	4,500	--	--	3
Di-n-octyl phthalate	ND<10	1.1	ND<1.0	--	--	1,500	3						

Outfall	Outfall A	Dolan Vault	Outfall B	Outfall C	Outfall D	Outfall E	Outfall 6	Outfall 7	City Outfall 15	Human Health Screening Levels		Ecological Receptor Screening Level <sup>3</sup>
										Fish Consumption <sup>2</sup>	Drinking Water MCL	
Sample Collection Location	CB-4	Dolan Vault	SD-2	Outfall C	CB-5	CB-15	CB-6	CB-1	CB-16			
PAHs by EPA Method 8270C-SIM * (µg/L)												
Acenaphthene	ND<0.0018	ND<0.0018	ND<0.0018	ND<0.0018	ND<0.0018	ND<0.0018	ND<0.0018	ND<0.0018	ND<0.0018	990	0.20	370
Acenaphthylene	ND<0.0014	ND<0.0014	ND<0.0014	ND<0.0014	ND<0.0014	ND<0.0014	ND<0.0014	ND<0.0014	ND<0.0014	--	0.20	--
Anthracene	ND<0.00045	ND<0.00045	ND<0.00045	ND<0.00045	ND<0.00045	ND<0.00045	ND<0.00045	ND<0.00045	ND<0.00045	40,000	0.20	1,800
Benz(a)anthracene	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	0.018	0.20	0.092
Benzo(a)pyrene	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	0.018	0.20	0.0092
Benzo(b)fluoranthene	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	0.018	0.20	0.092
Benzo(g,h,i)perylene	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	--	0.20	--
Benzo(k)fluoranthene	ND<0.0021	ND<0.0021	ND<0.0021	ND<0.0021	ND<0.0021	ND<0.0021	ND<0.0021	ND<0.0021	ND<0.0021	0.018	0.20	0.92
Chrysene	ND<0.00068	ND<0.00068	ND<0.00068	ND<0.00068	ND<0.00068	ND<0.00068	ND<0.00068	ND<0.00068	ND<0.00068	0.018	0.20	9.2
Dibenz(a,h)anthracene	ND<0.00096	ND<0.00096	ND<0.00096	ND<0.00096	ND<0.00096	ND<0.00096	ND<0.00096	ND<0.00096	ND<0.00096	0.018	0.20	0.0092
Fluoranthene	ND<0.00065	ND<0.00065	ND<0.00065	ND<0.00065	ND<0.00065	ND<0.00065	ND<0.00065	ND<0.00065	ND<0.00065	140	0.20	1,500
Fluorene	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	ND<0.0011	5,300	0.20	240
Indeno(1,2,3-cd)pyrene	ND<0.0012	ND<0.0012	ND<0.0012	ND<0.0012	ND<0.0012	ND<0.0012	ND<0.0012	ND<0.0012	ND<0.0012	0.018	0.20	0.092
Naphthalene	ND<0.011	ND<0.011	ND<0.011	ND<0.011	ND<0.011	ND<0.011	ND<0.011	ND<0.011	ND<0.011	--	0.20	6.2
Phenanthrene	ND<0.00073	ND<0.00073	ND<0.00073	ND<0.00073	0.054	ND<0.00073	ND<0.00073	ND<0.00073	ND<0.00073	--	0.20	--
Pyrene	ND<0.00083	ND<0.00083	ND<0.00083	ND<0.00083	ND<0.00083	ND<0.00083	ND<0.00083	ND<0.00083	ND<0.00083	4,000	0.20	180
1-Methylnaphthalene	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0019	--	--	--
2-Methylnaphthalene	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	--	0.20	--

Notes:

- Chemical analysis performed by Apex Laboratories, LLC of Tigard, Oregon, and Environmental Science Corp. of Mt. Juliet, Tennessee
- DEQ's 2004 AWQC (organism only)
- Per the Portland Harbor JSCS, the value used is in order of availability: EPA's 2004 National Recommended Water Quality Criteria (chronic); DEQ's 2004 AWQC (chronic); and Oak Ridge National Laboratory's Tier II Secondary Chronic Values.

--: not analyzed/applicable

\*: laboratory method detection limit reported in table

ND: not detected at a concentration greater than the laboratory method reporting limit

**TABLE 3**  
**May 7, 2006 Stormwater Sampling Analytical Results<sup>1</sup>**  
**Sulzer Pumps Facility**  
**2800 NW Front Avenue**  
**Portland, Oregon**

Outfall	Outfall B	Outfall C	Outfall D	Outfall E	Outfall F	Outfall 6	Outfall 7	Human Health Screening Levels		Ecological Receptor Screening Level <sup>3</sup>
								Fish	Drinking Water	
Sample Collection Location	SD-2	Outfall C	CB-5	CB-15	CB-17	CB-6	CB-1	Consumption <sup>2</sup>	MCL	Tap Water PRG
<b>Total Metals by EPA Method 200 Series (mg/L)</b>										
Chromium	0.00207	ND<0.0010	0.00141	0.00471	ND<0.0010	0.00185	0.00817	--	0.100	--
Copper	0.0339	0.0282	0.0332	0.0707	ND<0.0020	0.013	0.0184	--	1.3	1.5
Lead	0.00226	0.0022	0.002	0.00702	ND<0.0010	0.00593	0.0082	--	0.015	--
Zinc	0.314	0.329	0.693	0.279	0.0119	0.128	0.239	26	5.0	11
pH (field measurement)	6.84	5.4	6.32	6.55	6.62	5.70	6.68	--	--	--
TSS by EPA Method 160.2 (mg/L)	20	ND<10.0	ND<10.0	42	ND<10.0	12.0	37.0	--	--	--
Oil and Grease by EPA Method 1664/1664A	ND<4.76	ND<4.85	ND<4.76	ND<4.76	ND<4.81	ND<4.76	ND<4.76	--	--	--
<b>PAHs by EPA Method 8270M-SIM (µg/L)</b>										
Acenaphthene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	990	0.20	370
Acenaphthylene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	--	0.20	--
Anthracene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	40,000	0.20	1,800
Benz(a)anthracene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	0.018	0.20	0.092
Benzo(a)pyrene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	0.018	0.20	0.0092
Benzo(b)fluoranthene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	0.018	0.20	0.092
Benzo(g,h,i)perylene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	--	0.20	--
Benzo(k)fluoranthene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	0.018	0.20	0.92
Chrysene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	0.018	0.20	9.2
Dibenz(a,h)anthracene	ND<0.192	ND<0.190	ND<0.190	ND<0.0196	ND<0.194	ND<0.192	ND<0.196	0.018	0.20	0.0092
Fluoranthene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.147	140	0.20	1,500
Fluorene	ND<0.192	ND<0.0952	ND<0.143	ND<0.196	ND<0.0971	ND<0.0962	ND<0.0980	5,300	0.20	240
Indeno(1,2,3-cd)pyrene	ND<0.0962	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	0.018	0.20	0.092
Naphthalene	ND<0.192	ND<0.0952	ND<0.190	ND<0.147	ND<0.0971	ND<0.144	ND<0.0980	--	0.20	6.2
Phenanthrene	ND<0.144	ND<0.0952	ND<0.0952	ND<0.147	ND<0.0971	0.201	0.221	--	0.20	--
Pyrene	ND<0.0963	ND<0.0952	ND<0.0952	ND<0.0980	ND<0.0971	ND<0.0962	ND<0.0980	4,000	0.20	180

Notes:

1. Stormwater sampling conducted by Sterling Technologies, LLC on the May 7, 2006 EPA defined rain event.

2. DEQ's 2004 AWQC (organism only)

3. Per the Portland Harbor Joint Source Control Strategy, the value used is in order of availability: EPA's 2004 National Recommended Water Quality Criteria (chronic); DEQ's 2004 AWQC (chronic); and Oak Ridge National Laboratory's Tier II Secondary Chronic Values.

--: not analyzed/applicable

ND: not detected at a concentration greater than the laboratory method reporting limit

**TABLE 4**  
**October 31, 2005 Catch Basin Sediment Sampling**  
**Sulzer Pumps Facility**  
**2800 NW Front Avenue**  
**Portland, Oregon**

Hydrocarbons by Method NWTPH-Dx (mg/Kg)	Composite #1 outfall C & sanitary	Composite #2 outfall D & sanitary	Composite #3 outfall C & outfall D	Composite #4 outfall B & outfall A	Composite #5 outfall A	Composite #6 outfall E & 15	CB-SB-5 outfall D	MacDonald PECs and Other SQVs
Diesel-range	ND<491	ND<498	2,390	ND<1,230	ND<1,260	1,750	2,020	--
Heavy Oil-range	2,190	2,430	6,180	3,970	2,570	4,390	5,050	--
<b>TCLP Metals by EPA 1311/6000/7000 Series Methods (mg/L)</b>								
Arsenic	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--
Barium	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	2.32	ND<2.0	--
Cadmium	ND<0.20	ND<0.20	ND<0.20	0.332	ND<0.20	ND<0.20	ND<0.20	--
Chromium	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	--
Copper	0.387	ND<0.20	ND<0.20	ND<0.20	0.509	ND<0.20	ND<0.20	--
Lead	0.57	0.217	ND<0.20	0.323	1.39	ND<0.20	0.347	--
Mercury	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	ND<0.0002	--
Selenium	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--
Silver	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	--
Zinc	3.77	2.68	4.55	13.4	5.28	2.63	19.1	--
<b>PAHs by EPA Method 8270-SIM (mg/Kg)</b>								
Acenaphthene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.133	0.747	0.3
Acenaphthylene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.133	ND<0.331	0.2
Anthracene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.267	1.06	0.845
Benz(a)anthracene	ND<0.334	ND<0.167	ND<0.330	0.488	ND<0.167	ND<0.133	0.78	1.05
Benzo(a)pyrene	ND<0.334	ND<0.167	ND<0.330	0.458	0.175	ND<0.267	ND<0.331	1.45
Benzo(b)fluoranthene	ND<0.334	ND<0.167	ND<0.330	0.58	0.219	ND<0.267	0.517	--
Benzo(g,h,i)perylene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.267	ND<0.331	0.3
Benzo(k)fluoranthene	ND<0.334	ND<0.167	ND<0.330	0.422	0.19	ND<0.267	0.367	13
Chrysene	0.374	0.213	ND<0.330	0.749	0.294	ND<0.133	1.05	1.29
Dibenz(a,h)anthracene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.267	ND<0.331	1.3
Fluoranthene	0.524	ND<0.167	0.5	1.55	0.372	0.167	4.33	2.23
Fluorene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.267	1.31	0.536
Indeno(1,2,3-cd)pyrene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.267	ND<0.331	0.1
Naphthalene	ND<0.334	ND<0.167	ND<0.330	ND<0.330	ND<0.167	ND<0.133	0.355	0.561
Phenanthrene	ND<0.334	ND<0.167	0.398	1.15	0.255	0.528	6.08	1.17
Pyrene	0.487	ND<0.167	0.453	1.43	0.378	0.307	3.22	1.52

Notes:

Sediment sampling completed by Sterling Technologies, LLC on October 31, 2005.

ND: not detected at a concentration above laboratory method detection limit

## **Appendix A**



## RECEIVING RECORD

Head Office  
4150 N. Suttle Rd.  
Portland, OR 97217  
1-800-367-8894

R-01-07-0607-001

Received From:  
Cov-12 Clean Sweep  
501 International Way  
Longview WA 98632  
CBAT WAD988467107  
Phone: 360-426-3816  
Customer ID# 771  
Driver: Jason

Receiving Location: Plant #  
1501 N. Suttle Road  
Portland, OR 97217  
Phone: 503-236-8352  
CBAT WAD980975692

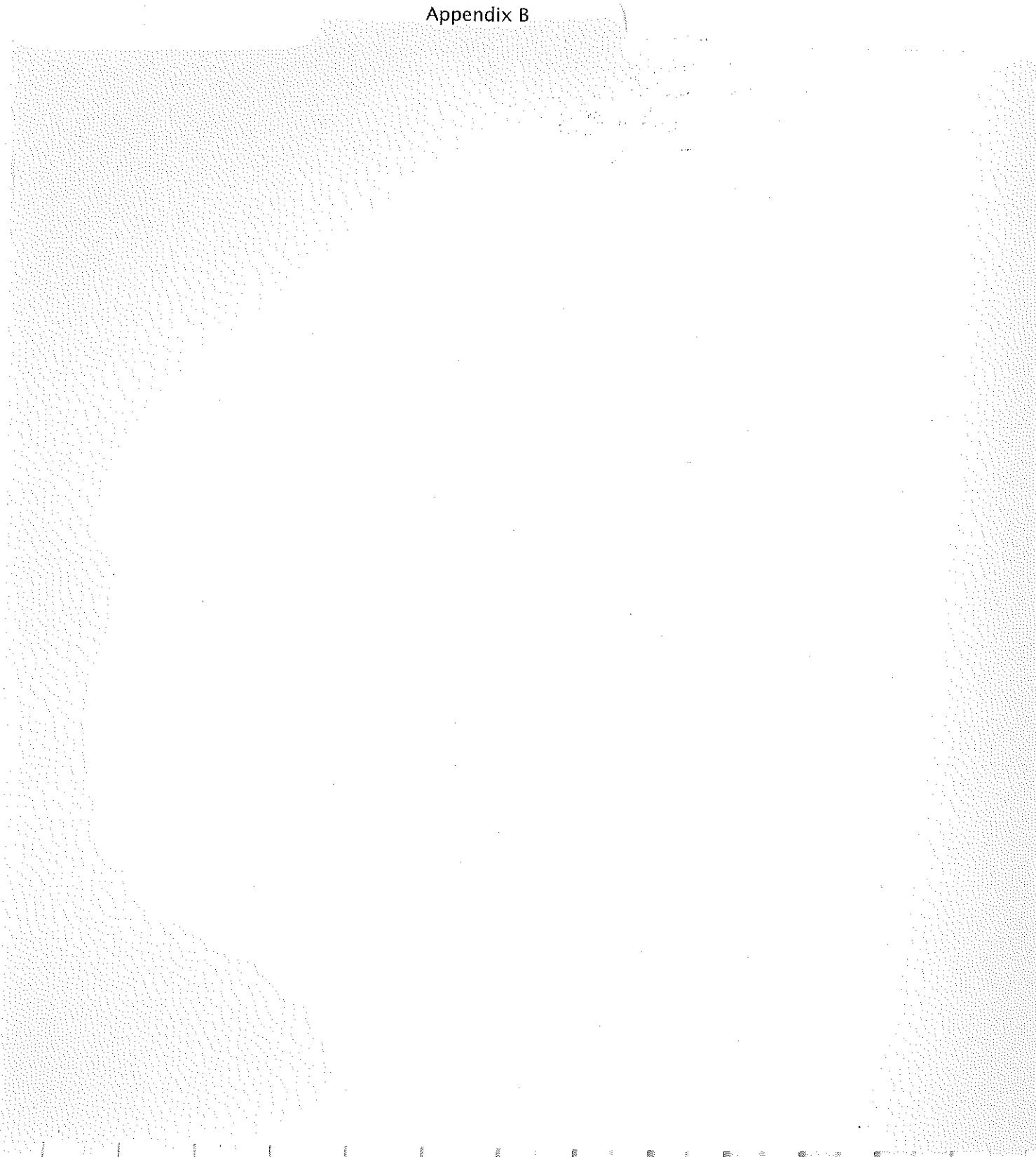
Date	Terms	Written By	Sales Rep.	Page			
06/07/07	-0-	Jim	Steve	1 of 1			
Line	Qty.	Unit	Item	%H2O	Manifest #	B/L#	Net Qty
1	1	Each	Hydro Clor-D-Tect Kit Generator ID# 10462 Sulzer				
		Total	Each	1.			
2	200	Gal.	Emulsified Oil & Water Generator ID# 10462 Sulzer job#B70238.	97 %			
3	3	Gal.	Oily Solids Generator ID# 10462 Sulzer job#B70238.				
		Total	Gal.	203.			

Customer warrants that the waste petroleum products being received do not contain any contaminants including, without limitation, pesticides, chlorinated solvents at total concentrations greater than 1000 PPM, PCB's greater than 2 PPM, or any other material classified as hazardous waste by 40 CFR part 261, Subparts C and D (implementing the Federal Resource Conservation and Recovery Act) or by any other state or local hazardous waste classification program. Should laboratory tests find this product not in compliance with 40 CFR part 261 customer agrees to pay all disposal costs incurred.

Signed X

DATE: 06/07/07

## **Appendix B**



# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Wednesday, January 17, 2007

Steve Nelson  
GeoDesign, Inc.  
15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

RE: Sulzer Pump-1-09 / [none]

Enclosed are the results of analyses for samples received by the laboratory on 12/14/2006 at 12:00:00PM.

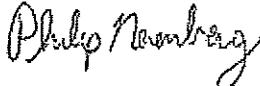
Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

---

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Philip Nerenberg, Lab Director

# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

GeoDesign, Inc.  
15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

Project: Sulzer Pump-1-09

Project Number: [none]

Project Manager: Steve Nelson

Reported:  
01/17/07 13:41

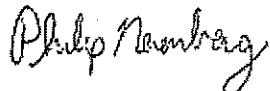
## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CB-4	A612049-01	Water	12/13/06 13:56	12/14/06 12:00
SD-2	A612049-02	Water	12/13/06 14:05	12/14/06 12:00
OF-C	A612049-03	Water	12/13/06 14:25	12/14/06 12:00
CB-1	A612049-04	Water	12/13/06 14:35	12/14/06 12:00
DOLAN VAULT	A612049-05	Water	12/13/06 14:45	12/14/06 12:00
CB-15	A612049-06	Water	12/13/06 15:00	12/14/06 12:00
CB-16	A612049-07	Water	12/13/06 15:25	12/14/06 12:00
CB-6	A612049-08	Water	12/13/06 15:10	12/14/06 12:00
CB-5	A612049-09	Water	12/13/06 15:45	12/14/06 12:00

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 503-718-2323 Phone  
 503-718-0333 Fax

GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
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## ANALYTICAL SAMPLE RESULTS

### Petroleum Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-01 (CB-4)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	ND	---	0.250	mg/L	1	12/14/06 17:22	NWTPH-Dx	
Oil Range Organics	0.703	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 73 % Limits: 50-150 %					
<b>A612049-02 (SD-2)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	ND	---	0.250	mg/L	1	12/14/06 17:56	NWTPH-Dx	
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 78 % Limits: 50-150 %					
<b>A612049-03 (OF-C)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	ND	---	0.250	mg/L	1	12/14/06 18:30	NWTPH-Dx	
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 69 % Limits: 50-150 %					
<b>A612049-04 (CB-1)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	0.402	---	0.250	mg/L	1	12/14/06 19:04	NWTPH-Dx	
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 78 % Limits: 50-150 %					
<b>A612049-05 (DOLAN VAULT)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	ND	---	0.250	mg/L	1	12/15/06 16:44	NWTPH-Dx	
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 84 % Limits: 50-150 %					
<b>A612049-06 (CB-15)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	ND	---	0.250	mg/L	1	12/15/06 17:16	NWTPH-Dx	
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 84 % Limits: 50-150 %					
<b>A612049-07 (CB-16)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	ND	---	0.250	mg/L	1	12/15/06 17:49	NWTPH-Dx	
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 63 % Limits: 50-150 %					
<b>A612049-08 (CB-6)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	ND	---	0.250	mg/L	1	12/15/06 18:22	NWTPH-Dx	
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
			Recovery: 89 % Limits: 50-150 %					

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GeoDesign, Inc.  
15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

Project: Sulzer Pump-1-09  
Project Number: [none]  
Project Manager: Steve Nelson

Reported:  
01/17/07 13:41

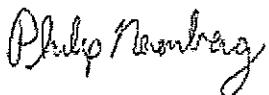
## ANALYTICAL SAMPLE RESULTS

### Petroleum Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-09 (CB-5)</b>								
			<b>Matrix: Water</b>					
Diesel Range Organics	0.329	---	0.250	mg/L	1	12/15/06 18:54	NWTPH-Dx	"
Oil Range Organics	ND	---	0.500	"	"	"	"	"
<i>Surrogate: o-Terphenyl (Surr)</i>								
<i>Recovery: 86 %   Limits: 50-150 %</i>								

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GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
---	--	-----------------------------

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-01 (CB-4)</b>								
<b>Matrix: Water</b>								
Antimony	1.87	---	1.00	ug/L	1	12/28/06 17:36	EPA6020	
Barium	21.0	---	1.00	"	"	"	"	
Beryllium	ND	---	1.00	"	"	"	"	
Cadmium	1.15	---	1.00	"	"	"	"	
Chromium	3.40	---	1.00	"	"	"	"	
Copper	17.0	---	5.00	"	"	"	"	
Lead	37.6	---	1.00	"	"	"	"	
Manganese	83.0	---	1.00	"	"	01/04/07 14:57	"	
Nickel	4.56	---	1.00	"	"	12/28/06 17:36	"	
Selenium	ND	---	1.00	"	"	"	"	
Silver	7.24	---	2.00	"	"	"	"	
Thallium	ND	---	1.00	"	"	"	"	
Zinc	153	---	5.00	"	"	"	"	
<b>A612049-02 (SD-2)</b>								
<b>Matrix: Water</b>								
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:10	EPA6020	
Barium	3.92	---	1.00	"	"	"	"	
Beryllium	ND	---	1.00	"	"	"	"	
Cadmium	ND	---	1.00	"	"	"	"	
Chromium	1.08	---	1.00	"	"	"	"	
Copper	ND	---	5.00	"	"	"	"	
Lead	1.08	---	1.00	"	"	"	"	
Manganese	9.33	---	1.00	"	"	"	"	
Nickel	ND	---	1.00	"	"	"	"	
Selenium	ND	---	1.00	"	"	"	"	
Silver	ND	---	2.00	"	"	"	"	
Thallium	ND	---	1.00	"	"	"	"	
Zinc	48.3	---	5.00	"	"	"	"	
<b>A612049-03 (OF-C)</b>								
<b>Matrix: Water</b>								
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:16	EPA6020	
Barium	12.6	---	1.00	"	"	"	"	
Beryllium	ND	---	1.00	"	"	"	"	
Cadmium	ND	---	1.00	"	"	"	"	
Chromium	ND	---	1.00	"	"	"	"	
Copper	6.84	---	5.00	"	"	"	"	
Lead	1.38	---	1.00	"	"	"	"	

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GeoDesign, Inc.  
 15575 SW Sequoia Pkwy, Ste 100  
 Portland, OR 97224

Project: Sulzer Pump-1-09  
 Project Number: [none]  
 Project Manager: Steve Nelson

Reported:  
 01/17/07 13:41

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-03 (OF-C)</b>								
<b>Matrix: Water</b>								
Manganese	46.3	---	1.00	ug/L	1	"	EPA6020	"
Nickel	1.59	---	1.00	"	"	"	"	"
Selenium	ND	---	1.00	"	"	"	"	"
Silver	ND	---	2.00	"	"	"	"	"
Thallium	ND	---	1.00	"	"	"	"	"
Zinc	568	---	50.0	"	10	01/04/07 15:07	"	"
<b>A612049-04 (CB-1)</b>								
<b>Matrix: Water</b>								
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:21	EPA6020	"
Barium	10.7	---	1.00	"	"	"	"	"
Beryllium	ND	---	1.00	"	"	"	"	"
Cadmium	ND	---	1.00	"	"	"	"	"
Chromium	3.29	---	1.00	"	"	"	"	"
Copper	7.40	---	5.00	"	"	"	"	"
Lead	4.26	---	1.00	"	"	"	"	"
Manganese	54.4	---	1.00	"	"	"	"	"
Nickel	4.58	---	1.00	"	"	"	"	"
Selenium	ND	---	1.00	"	"	"	"	"
Silver	ND	---	2.00	"	"	"	"	"
Thallium	ND	---	1.00	"	"	"	"	"
Zinc	98.2	---	5.00	"	"	"	"	"
<b>A612049-05 (DOLAN VAULT)</b>								
<b>Matrix: Water</b>								
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:26	EPA6020	"
Barium	8.44	---	1.00	"	"	"	"	"
Beryllium	ND	---	1.00	"	"	"	"	"
Cadmium	ND	---	1.00	"	"	"	"	"
Chromium	1.69	---	1.00	"	"	"	"	"
Copper	ND	---	5.00	"	"	"	"	"
Lead	1.42	---	1.00	"	"	"	"	"
Manganese	21.7	---	1.00	"	"	"	"	"
Nickel	1.01	---	1.00	"	"	"	"	"
Selenium	ND	---	1.00	"	"	"	"	"
Silver	ND	---	2.00	"	"	"	"	"
Thallium	ND	---	1.00	"	"	"	"	"
Zinc	406	---	50.0	"	10	12/28/06 18:31	"	"

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GeoDesign, Inc.  
15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

Project: Sulzer Pump-1-09  
Project Number: [none]  
Project Manager: Steve Nelson

Reported:  
01/17/07 13:41

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-06 (CB-15)</b>								
			<b>Matrix: Water</b>					
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:36	EPA6020	
Barium	36.1	---	1.00	"	"	"	"	
Beryllium	ND	---	1.00	"	"	"	"	
Cadmium	ND	---	1.00	"	"	"	"	
Chromium	1.60	---	1.00	"	"	"	"	
Copper	13.7	---	5.00	"	"	"	"	
Lead	3.00	---	1.00	"	"	"	"	
Manganese	45.6	---	1.00	"	"	"	"	
Nickel	3.60	---	1.00	"	"	"	"	
Selenium	ND	---	1.00	"	"	"	"	
Silver	ND	---	2.00	"	"	"	"	
Thallium	ND	---	1.00	"	"	"	"	
Zinc	227	---	50.0	"	10	01/04/07 15:12	"	
<b>A612049-07 (CB-16)</b>								
			<b>Matrix: Water</b>					
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:41	EPA6020	
Barium	56.3	---	1.00	"	"	"	"	
Beryllium	ND	---	1.00	"	"	"	"	
Cadmium	ND	---	1.00	"	"	"	"	
Chromium	3.18	---	1.00	"	"	"	"	
Copper	7.40	---	5.00	"	"	"	"	
Lead	7.43	---	1.00	"	"	"	"	
Manganese	93.0	---	1.00	"	"	"	"	
Nickel	2.17	---	1.00	"	"	"	"	
Selenium	ND	---	1.00	"	"	"	"	
Silver	ND	---	2.00	"	"	"	"	
Thallium	ND	---	1.00	"	"	"	"	
Zinc	23.9	---	5.00	"	"	"	"	
<b>A612049-08 (CB-6)</b>								
			<b>Matrix: Water</b>					
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:46	EPA6020	
Barium	12.5	---	1.00	"	"	"	"	
Beryllium	ND	---	1.00	"	"	"	"	
Cadmium	ND	---	1.00	"	"	"	"	
Chromium	2.67	---	1.00	"	"	"	"	
Copper	7.08	---	5.00	"	"	"	"	
Lead	5.38	---	1.00	"	"	"	"	

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GeoDesign, Inc.  
 15575 SW Sequoia Pkwy, Ste 100  
 Portland, OR 97224

Project: Sulzer Pump-1-09  
 Project Number: [none]  
 Project Manager: Steve Nelson

Reported:  
 01/17/07 13:41

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-08 (CB-6)</b>								
Manganese	39.7	---	1.00	ug/L	1	"	EPA6020	"
Nickel	2.44	---	1.00	"	"	"	"	"
Selenium	ND	---	1.00	"	"	"	"	"
Silver	ND	---	2.00	"	"	"	"	"
Thallium	ND	---	1.00	"	"	"	"	"
Zinc	458	---	50.0	"	10	01/04/07 15:17	"	"
<b>A612049-09 (CB-5)</b>								
Antimony	ND	---	1.00	ug/L	1	12/28/06 18:51	EPA6020	"
Barium	14.0	---	1.00	"	"	"	"	"
Beryllium	ND	---	1.00	"	"	"	"	"
Cadmium	ND	---	1.00	"	"	"	"	"
Chromium	ND	---	1.00	"	"	"	"	"
Copper	8.75	---	5.00	"	"	"	"	"
Lead	1.08	---	1.00	"	"	"	"	"
Manganese	13.8	---	1.00	"	"	"	"	"
Nickel	2.17	---	1.00	"	"	"	"	"
Selenium	ND	---	1.00	"	"	"	"	"
Silver	ND	---	2.00	"	"	"	"	"
Thallium	ND	---	1.00	"	"	"	"	"
Zinc	194	---	50.0	"	10	01/04/07 15:22	"	"

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GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
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## ANALYTICAL SAMPLE RESULTS

### Dissolved Metals by EPA 6020 (ICPMS)

Analyst	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-01 (CB-4)</b> Matrix: Water								
pH	6.46	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-02 (SD-2)</b> Matrix: Water								
pH	6.78	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-03 (OF-C)</b> Matrix: Water								
pH	6.42	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-04 (CB-1)</b> Matrix: Water								
pH	6.50	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-05 (DOLAN VAULT)</b> Matrix: Water								
pH	6.67	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-06 (CB-15)</b> Matrix: Water								
pH	6.56	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-07 (CB-16)</b> Matrix: Water								
pH	6.84	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-08 (CB-6)</b> Matrix: Water								
pH	5.19	---	0.00	pH Units	1	12/14/06 16:49	6020	
<b>A612049-09 (CB-5)</b> Matrix: Water								
pH	6.22	---	0.00	pH Units	1	12/14/06 16:49	6020	

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15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

Project: Sulzer Pump-1-09  
Project Number: [none]  
Project Manager: Steve Nelson

Reported:  
01/17/07 13:41

## ANALYTICAL SAMPLE RESULTS

### Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>A612049-01 (CB-4)</b> <b>Matrix: Water</b>								
Total Suspended Solids	23.0	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-02 (SD-2)</b> <b>Matrix: Water</b>								
Total Suspended Solids	ND	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-03 (OF-C)</b> <b>Matrix: Water</b>								
Total Suspended Solids	ND	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-04 (CB-1)</b> <b>Matrix: Water</b>								
Total Suspended Solids	9.00	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-05 (DOLAN VAULT)</b> <b>Matrix: Water</b>								
Total Suspended Solids	ND	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-06 (CB-15)</b> <b>Matrix: Water</b>								
Total Suspended Solids	5.00	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-07 (CB-16)</b> <b>Matrix: Water</b>								
Total Suspended Solids	15.0	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-08 (CB-6)</b> <b>Matrix: Water</b>								
Total Suspended Solids	ND	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01
<b>A612049-09 (CB-5)</b> <b>Matrix: Water</b>								
Total Suspended Solids	ND	---	5.00	mg/L	1	01/17/07 12:42	EPA 160.2	H-01

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 15575 SW Sequoia Pkwy, Ste 100  
 Portland, OR 97224

Project: Sulzer Pump-1-09  
 Project Number: [none]  
 Project Manager: Steve Nelson

Reported:  
 01/17/07 13:41

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Petroleum Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes												
<b>Batch 6120039 - EPA 3510 (Fuels)</b>																								
<b>Water</b>																								
Blank (6120039-BLK1)																								
Analyzed: 12/14/06 18:30																								
Diesel Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	---												
Oil Range Organics	ND	---	0.500	"	"	---	---	---	---	---	---	---												
<i>Surr: o-Terphenyl (Surr)</i>	<i>Recovery: 80 %</i>			<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>																		
LCS (6120039-BS1)																								
Analyzed: 12/14/06 17:22																								
Diesel Range Organics	0.935	---	0.250	mg/L	1	1.25	---	75	70-130%	---	---	---												
Oil Range Organics	1.22	---	0.500	"	"	1.25	---	98	70-130%	---	---	---												
<i>Surr: o-Terphenyl (Surr)</i>	<i>Recovery: 86 %</i>			<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>																		
LCS Dup (6120039-BSD1)																								
Analyzed: 12/14/06 17:56																								
Diesel Range Organics	0.939	---	0.250	mg/L	1	1.25	---	75	70-130%	0.4	200%	---												
Oil Range Organics	1.16	---	0.500	"	"	1.25	---	93	70-130%	5	200%	---												
<i>Surr: o-Terphenyl (Surr)</i>	<i>Recovery: 85 %</i>			<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>																		
<b>Batch 6120044 - EPA 3510 (Fuels)</b>																								
<b>Water</b>																								
Blank (6120044-BLK1)																								
Analyzed: 12/15/06 18:22																								
Diesel Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	---												
Oil Range Organics	ND	---	0.500	"	"	---	---	---	---	---	---	---												
<i>Surr: o-Terphenyl (Surr)</i>	<i>Recovery: 82 %</i>			<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>																		
LCS (6120044-BS1)																								
Analyzed: 12/15/06 17:16																								
Diesel Range Organics	0.885	---	0.250	mg/L	1	1.25	---	71	70-130%	---	---	---												
Oil Range Organics	1.04	---	0.500	"	"	1.25	---	83	70-130%	---	---	---												
<i>Surr: o-Terphenyl (Surr)</i>	<i>Recovery: 77 %</i>			<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>																		
LCS Dup (6120044-BSD1)																								
Analyzed: 12/15/06 17:49																								
Diesel Range Organics	0.944	---	0.250	mg/L	1	1.25	---	76	70-130%	6	200%	---												
Oil Range Organics	1.19	---	0.500	"	"	1.25	---	95	70-130%	13	200%	---												
<i>Surr: o-Terphenyl (Surr)</i>	<i>Recovery: 84 %</i>			<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>																		

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Page 11 of 19

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 Tigard, OR 97223  
 503-718-2323 Phone  
 503-718-0333 Fax

GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
---	--	-----------------------------

## QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)												
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120088 - EPA 3015</b>											<b>Water</b>	
<b>Blank (6120088-BLK1)</b>											Analyzed: 01/04/07 14:47	
Manganese	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Antimony	ND	---	1.00	"	"	---	---	---	---	---	---	
Barium	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	---	1.00	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	5.00	"	"	---	---	---	---	---	---	
Lead	ND	---	1.00	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	2.00	"	"	---	---	---	---	---	---	
Thallium	ND	---	1.00	"	"	---	---	---	---	---	---	
Zinc	ND	---	5.00	"	"	---	---	---	---	---	---	
<b>LCS (6120088-BS1)</b>											Analyzed: 01/04/07 14:52	
Manganese	109	---	1.05	ug/L	1	106	---	103	80-120%	---	---	
Antimony	110	---	1.05	"	"	106	---	104	80-120%	---	---	
Barium	112	---	1.05	"	"	106	---	106	80-120%	---	---	
Beryllium	115	---	1.05	"	"	106	---	108	80-120%	---	---	
Cadmium	110	---	1.05	"	"	106	---	104	80-120%	---	---	
Chromium	107	---	1.05	"	"	106	---	101	80-120%	---	---	
Copper	112	---	5.26	"	"	106	---	106	80-120%	---	---	
Lead	113	---	1.05	"	"	106	---	107	80-120%	---	---	
Nickel	112	---	1.05	"	"	106	---	106	80-120%	---	---	
Selenium	110	---	1.05	"	"	106	---	104	80-120%	---	---	
Silver	110	---	2.11	"	"	106	---	104	80-120%	---	---	
Thallium	114	---	1.05	"	"	106	---	108	80-120%	---	---	
Zinc	112	---	5.26	"	"	106	---	106	80-120%	---	---	
<b>Duplicate (6120088-DUP1)</b>											Analyzed: 01/04/07 15:02	
Manganese	83.8	---	1.00	ug/L	1	---	83.0	---	---	1	20%	
											Analyzed: 12/28/06 17:40	

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GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
---	--	-----------------------------

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120088 - EPA 3015</b>												
<b>Water</b>												
<b>Duplicate (6120088-DUP1)</b>												
Source: A612049-01      Analyzed: 12/28/06 17:40												
Antimony	1.73	---	1.00	ug/L	"	---	1.87	---	---	8	20%	
Barium	20.9	---	1.00	"	"	---	21.0	---	---	0.5	20%	
Beryllium	ND	---	1.00	"	"	---	ND	---	---		20%	
Cadmium	1.11	---	1.00	"	"	---	1.15	---	---	4	20%	
Chromium	4.13	---	1.00	"	"	---	3.40	---	---	19	20%	
Copper	16.7	---	5.00	"	"	---	17.0	---	---	2	20%	
Lead	37.6	---	1.00	"	"	---	37.6	---	---	0	20%	
Nickel	4.89	---	1.00	"	"	---	4.56	---	---	7	20%	
Selenium	ND	---	1.00	"	"	---	ND	---	---		20%	
Silver	ND	---	2.00	"	"	---	7.24	---	---		20%	
Thallium	0.274	---	1.00	"	"	---	0.327	---	---	18	20%	
Zinc	151	---	5.00	"	"	---	153	---	---	1	20%	
<b>Matrix Spike (6120088-MS1)</b>												
Source: A612049-01      Analyzed: 12/28/06 17:45												
Antimony	112	---	1.05	ug/L	1	106	1.87	104	75-125%	---	---	
Barium	133	---	1.05	"	"	106	21.0	106	75-125%	---	---	
Beryllium	115	---	1.05	"	"	106	ND	108	75-125%	---	---	
Cadmium	114	---	1.05	"	"	106	1.15	106	75-125%	---	---	
Chromium	112	---	1.05	"	"	106	3.40	102	75-125%	---	---	
Copper	131	---	5.26	"	"	106	17.0	108	75-125%	---	---	
Lead	154	---	1.05	"	"	106	37.6	110	75-125%	---	---	
Nickel	117	---	1.05	"	"	106	4.56	106	75-125%	---	---	
Selenium	106	---	1.05	"	"	106	ND	100	75-125%	---	---	
Silver	105	---	2.11	"	"	106	7.24	92	75-125%	---	---	
Thallium	113	---	1.05	"	"	106	0.327	106	75-125%	---	---	
Analyzed: 12/28/06 18:05												
Manganese	201	---	10.5	"	10	106	83.0	111	75-125%	---	---	
Zinc	265	---	52.6	"	"	106	153	106	75-125%	---	---	

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GeoDesign, Inc.  
15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

Project: Sulzer Pump-1-09  
Project Number: [none]  
Project Manager: Steve Nelson

Reported:  
01/17/07 13:41

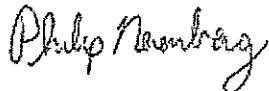
## QUALITY CONTROL (QC) SAMPLE RESULTS

### Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120040 - Method Prep: Aq</b>												
<b>Water</b>												
<b>Duplicate (6120040-DUP1)</b>												
Source: A612049-01												
pH	6.45	---	0.00	pH Units	1	---	6.46	---	---	0.155	200%	
<b>Reference (6120040-SRM1)</b>												
pH	5.95	---		pH Units	1	6.00	99.2	8.333-101.66%	---	---	---	
<b>Reference (6120040-SRM2)</b>												
pH	7.91	---		pH Units	1	8.00	98.9	98.75-101.25%	---	---	---	

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Page 14 of 19

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GeoDesign, Inc.  
15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

Project: Sulzer Pump-1-09  
Project Number: [none]  
Project Manager: Steve Nelson

Reported:  
01/17/07 13:41

## QUALITY CONTROL (QC) SAMPLE RESULTS

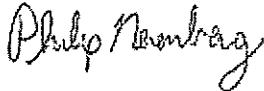
### Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010039 - Total Suspended Solids</b>												
<b>Blank (7010039-BLK1)</b>												
Total Suspended Solids ND --- 5.00 mg/L 1 --- --- --- --- --- --- ---												
<b>Duplicate (7010039-DUP1)</b>												
Total Suspended Solids ND --- 5.00 mg/L 1 --- 23.0 --- --- 200%												

### Water

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Page 15 of 19

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GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
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## Apex Laboratories

### Petroleum Hydrocarbons by NWTPH-Dx

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>EPA 3510 (Fuels)</b>							
<u>Batch: 6120039</u>							
A612049-01	Water	NWTPH-Dx	12/13/06 13:56	12/14/06 13:31	1000mL/5mL	1000mL/5mL	1.00
A612049-02	Water	NWTPH-Dx	12/13/06 14:05	12/14/06 13:31	1000mL/5mL	1000mL/5mL	1.00
A612049-03	Water	NWTPH-Dx	12/13/06 14:25	12/14/06 13:31	1000mL/5mL	1000mL/5mL	1.00
A612049-04	Water	NWTPH-Dx	12/13/06 14:35	12/14/06 13:31	1000mL/5mL	1000mL/5mL	1.00
<u>Batch: 6120044</u>							
A612049-05	Water	NWTPH-Dx	12/13/06 14:45	12/15/06 11:15	1000mL/5mL	1000mL/5mL	1.00
A612049-06	Water	NWTPH-Dx	12/13/06 15:00	12/15/06 11:15	1000mL/5mL	1000mL/5mL	1.00
A612049-07	Water	NWTPH-Dx	12/13/06 15:25	12/15/06 11:15	1000mL/5mL	1000mL/5mL	1.00
A612049-08	Water	NWTPH-Dx	12/13/06 15:10	12/15/06 11:15	1000mL/5mL	1000mL/5mL	1.00
A612049-09	Water	NWTPH-Dx	12/13/06 15:45	12/15/06 11:15	1000mL/5mL	1000mL/5mL	1.00

### Total Metals by EPA 6020 (ICPMS)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>EPA 3015</b>							
<u>Batch: 6120088</u>							
A612049-01	Water	EPA6020	12/13/06 13:56	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-02	Water	EPA6020	12/13/06 14:05	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-03	Water	EPA6020	12/13/06 14:25	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-04	Water	EPA6020	12/13/06 14:35	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-05	Water	EPA6020	12/13/06 14:45	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-06	Water	EPA6020	12/13/06 15:00	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-07	Water	EPA6020	12/13/06 15:25	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-08	Water	EPA6020	12/13/06 15:10	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95
A612049-09	Water	EPA6020	12/13/06 15:45	12/28/06 08:45	45mL/47.5mL	45mL/50mL	0.95

### Dissolved Metals by EPA 6020 (ICPMS)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Method Prep: Aq</b>							
<u>Batch: 6120040</u>							
A612049-01	Water	6020	12/13/06 13:56	12/14/06 13:15	1mL/1mL	1mL/1mL	NA
A612049-02	Water	6020	12/13/06 14:05	12/14/06 13:15	1mL/1mL	1mL/1mL	NA

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GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
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## Apex Laboratories

### Dissolved Metals by EPA 6020 (ICPMS)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Method Prep: Aq</b>							
A612049-03	Water	6020	12/13/06 14:25	12/14/06 13:15	1mL/1mL	1mL/1mL	NA
A612049-04	Water	6020	12/13/06 14:35	12/14/06 13:15	1mL/1mL	1mL/1mL	NA
A612049-05	Water	6020	12/13/06 14:45	12/14/06 13:15	1mL/1mL	1mL/1mL	NA
A612049-06	Water	6020	12/13/06 15:00	12/14/06 13:15	1mL/1mL	1mL/1mL	NA
A612049-07	Water	6020	12/13/06 15:25	12/14/06 13:15	1mL/1mL	1mL/1mL	NA
A612049-08	Water	6020	12/13/06 15:10	12/14/06 13:15	1mL/1mL	1mL/1mL	NA
A612049-09	Water	6020	12/13/06 15:45	12/14/06 13:15	1mL/1mL	1mL/1mL	NA

### Conventional Chemistry Parameters

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Total Suspended Solids</b>							
Batch: 7010039							
A612049-01	Water	EPA 160.2	12/13/06 13:56	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-02	Water	EPA 160.2	12/13/06 14:05	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-03	Water	EPA 160.2	12/13/06 14:25	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-04	Water	EPA 160.2	12/13/06 14:35	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-05	Water	EPA 160.2	12/13/06 14:45	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-06	Water	EPA 160.2	12/13/06 15:00	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-07	Water	EPA 160.2	12/13/06 15:25	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-08	Water	EPA 160.2	12/13/06 15:10	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA
A612049-09	Water	EPA 160.2	12/13/06 15:45	01/15/07 09:41	IN/A/IN/A	1N/A/1mL	NA

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Page 17 of 19

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GeoDesign, Inc. 15575 SW Sequoia Pkwy, Ste 100 Portland, OR 97224	Project: Sulzer Pump-1-09 Project Number: [none] Project Manager: Steve Nelson	Reported: 01/17/07 13:41
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## Notes and Definitions

### Qualifiers:

H-01 This sample was analyzed outside the EPA recommended holding time.

### Notes and Conventions:

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

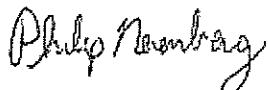
RPD Relative Percent Difference

MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.

QC Results for Client Specific Batch QC (Duplicates/Matrix Spikes) are reported only with the associated project.

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Page 18 of 19

# Apex Labs

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GeoDesign, Inc.  
15575 SW Sequoia Pkwy, Ste 100  
Portland, OR 97224

Project: Sulzer Pump-1-09  
Project Number: [none]  
Project Manager: Steve Nelson

Reported:  
01/17/07 13:41

## APEX LABS

## CHAIN OF CUSTODY

12232 S.W. Garden Place Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Customer		Analyst		Project		Sample ID		Matrix		# of Containers		Receptacle		Type		Notes		Initial Review		Final Review		Comments			
GeoDesign, Inc.		Steve Nelson		SULZER Pump-1-09				15575 SW Sequoia Pkwy, STE 100		Project #		Project Name		Sample Type		Sample ID		Sample Date		Initial Review		Final Review		Comments	
SAMPLE ID	LAB ID #	DATE	TIME	IN MATRIX	# OF CONTAINERS	RECEPTACLE	TYPE	WEIGHT	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS	TESTS		
CB-4	01	12-13	8:46	W	6	X																			
SD-2	02	12-13	14:45	W	6	X																			
DF-C	03	12-13	14:15	W	6	X																			
CB-1	04	12-13	14:55	W	6	X																			
DOLAN VAULT	05	12-13	14:45	W	6	X																			
CB-15	06	12-13	15:00	W	6	X																			
CB-16	07	12-13	15:15	W	6	X																			
CB-6	08	12-13	15:10	W	6	X																			
CB-5	09	12-13	15:45	W	6	X																			
Normal Turn Around Time (TAT) = 3-10 Business Days												RECEIVED BY:													
TAT Requested (check)												Signature:	Date:	Signature:	Date:	Signature:	Date:	Signature:							
4 DAY      5 DAY      Other: _____												Print Name:													
SPECIAL INSTRUCTIONS:												Comments:													
<ul style="list-style-type: none"> <li>- LOW LEVEL PCBs, PCB FRAMING</li> <li>- LOW LEVEL PCBs w/ CLEAN UP</li> <li>- TOTAL TAL METALS</li> </ul>												RECEIVED BY:													
												Signature:	Date:	Signature:	Date:	Signature:	Date:								
												Comments:	Comments:	Comments:	Comments:	Comments:	Comments:								
SAMPLES ARE HELD FOR 30 DAYS												Comments:	Comments:	Comments:	Comments:	Comments:	Comments:								

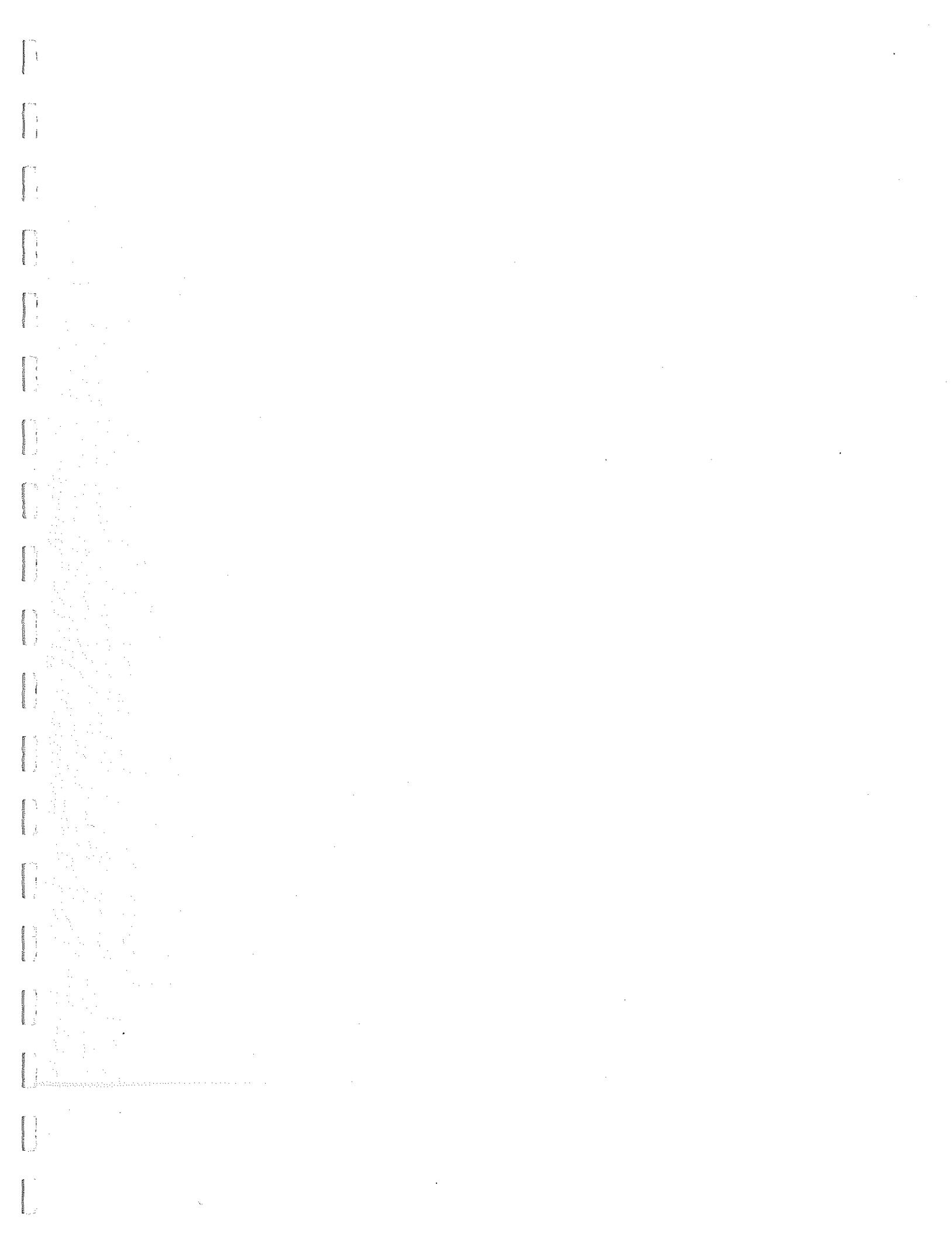
Apex Laboratories

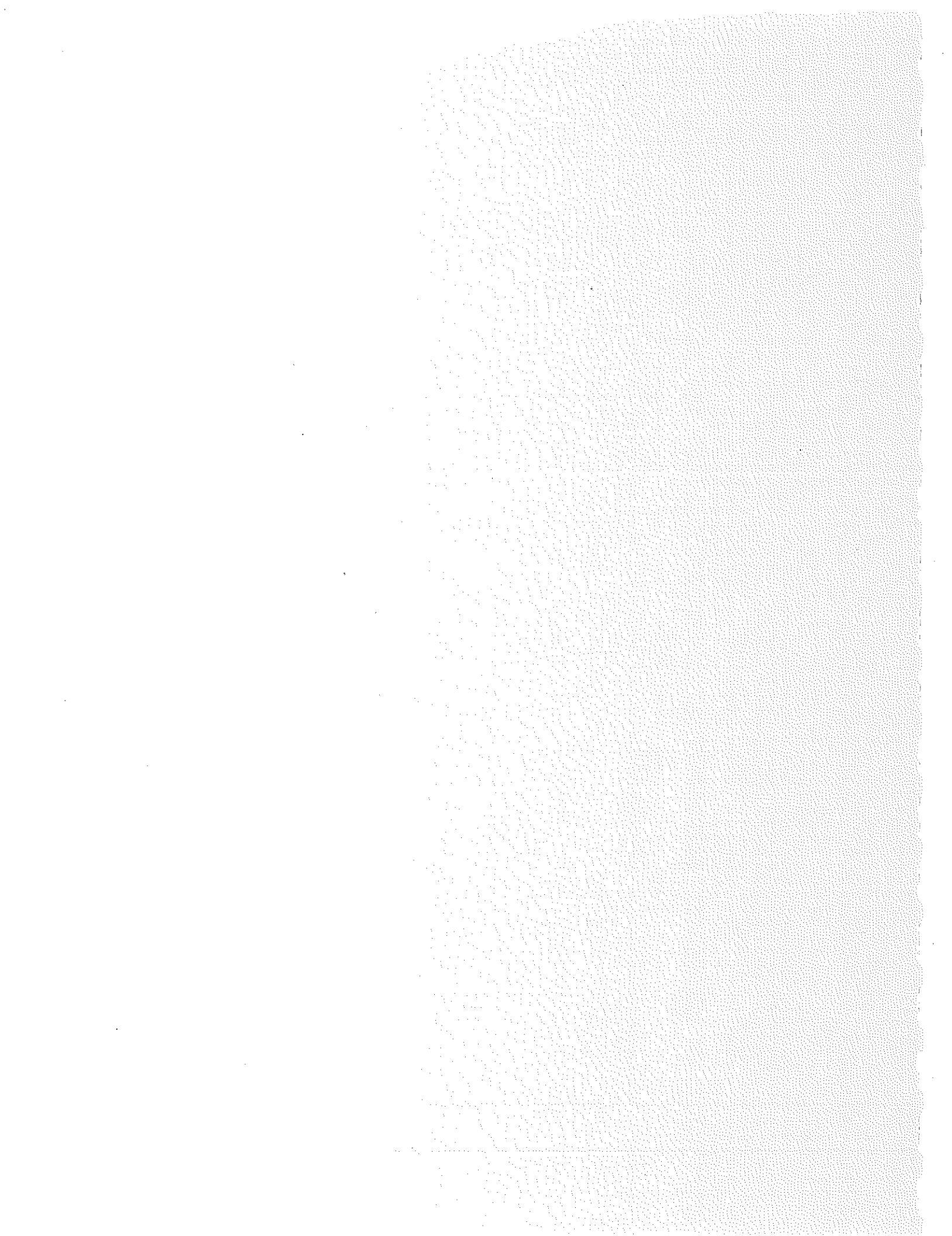
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Philip Nerenberg*

Philip Nerenberg, Lab Director









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Est. 1970

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

**Report Summary**

Thursday January 11, 2007

Report Number: L275822

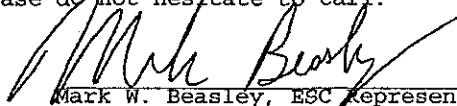
Samples Received: 01/09/07

Client Project: A612049

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Reviewed By:

  
Mark W. Beasley, ESC Representative

*Laboratory Certification Numbers*

AZLA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487  
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140  
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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REPORT OF ANALYSIS

January 11, 2007

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : January 09, 2007

ESC Sample # : L275822-01

Description :

Site ID :

Sample ID : A612049-01

Project # : A612049

Collected By :

Collection Date : 12/13/06 13:56

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	0.77	0.10	mg/l	6010B	01/10/07	1
Calcium	2.1	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	1.6	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.43	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	BDL	0.50	mg/l	6010B	01/10/07	1
Sodium	1.6	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

January 11, 2007

Date Received : January 09, 2007

ESC Sample # : L275822-02

Description :

Site ID :

Sample ID : A612049-02

Project # : A612049

Collected By :

Collection Date : 12/13/06 14:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	0.16	0.10	mg/l	6010B	01/10/07	1
Calcium	1.2	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	0.31	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.11	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	BDL	0.50	mg/l	6010B	01/10/07	1
Sodium	BDL	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

January 11, 2007

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : January 09, 2007

ESC Sample # : L275822-03

Description :

Site ID :

Sample ID : A612049-03

Project # : A612049

Collected By :  
Collection Date : 12/13/06 14:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	BDL	0.10	mg/l	6010B	01/10/07	1
Calcium	3.5	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	0.13	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.84	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	BDL	0.50	mg/l	6010B	01/10/07	1
Sodium	6.9	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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## REPORT OF ANALYSIS

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

January 11, 2007

Date Received : January 09, 2007

ESC Sample # : L275822-04

Description :

Site ID :

Sample ID : A612049-04

Project # : A612049

Collected By :

Collection Date : 12/13/06 14:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	0.21	0.10	mg/l	6010B	01/10/07	1
Calcium	1.5	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	1.4	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.22	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	0.64	0.50	mg/l	6010B	01/10/07	1
Sodium	1.2	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL ~ Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

January 11, 2007

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : January 09, 2007

ESC Sample # : L275822-05

Description :

Site ID :

Sample ID : A612049-05

Project # : A612049

Collected By :  
Collection Date : 12/13/06 14:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	0.16	0.10	mg/l	6010B	01/10/07	1
Calcium	1.2	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	0.17	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.18	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	BDL	0.50	mg/l	6010B	01/10/07	1
Sodium	1.6	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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## REPORT OF ANALYSIS

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

January 11, 2007

Date Received : January 09, 2007

ESC Sample # : L275822-06

Description :

Site ID :

Sample ID : A612049-06

Project # : A612049

Collected By :

Collection Date : 12/13/06 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	0.24	0.10	mg/l	6010B	01/10/07	1
Calcium	4.3	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	0.82	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.62	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	0.58	0.50	mg/l	6010B	01/10/07	1
Sodium	3.9	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

January 11, 2007

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : January 09, 2007

ESC Sample # : L275822-07

Description :

Site ID :

Sample ID : A612049-07

Project # : A612049

Collected By :  
Collection Date : 12/13/06 15:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	2.3	0.10	mg/l	6010B	01/10/07	1
Calcium	3.9	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	3.4	0.10	mg/l	6010B	01/10/07	1
Magnesium	1.3	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	0.95	0.50	mg/l	6010B	01/10/07	1
Sodium	2.6	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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## REPORT OF ANALYSIS

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

January 11, 2007

Date Received : January 09, 2007

ESC Sample # : L275822-08

Description :

Site ID :

Sample ID : A612049-08

Project # : A612049

Collected By :  
Collection Date : 12/13/06 15:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	0.16	0.10	mg/l	6010B	01/10/07	1
Calcium	2.5	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	0.38	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.28	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	BDL	0.50	mg/l	6010B	01/10/07	1
Sodium	1.7	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

January 11, 2007

Phillip Nerenberg  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

ESC Sample # : L275822-09

Date Received : January 09, 2007

Site ID :

Description :

Project # : A612049

Sample ID : A612049-09

Collected By :  
Collection Date : 12/13/06 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	01/11/07	1
Aluminum	BDL	0.10	mg/l	6010B	01/10/07	1
Calcium	1.4	0.50	mg/l	6010B	01/10/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/10/07	1
Iron	BDL	0.10	mg/l	6010B	01/10/07	1
Magnesium	0.28	0.10	mg/l	6010B	01/10/07	1
Molybdenum	BDL	0.0050	mg/l	6010B	01/10/07	1
Potassium	BDL	0.50	mg/l	6010B	01/10/07	1
Sodium	2.2	0.50	mg/l	6010B	01/10/07	1
Vanadium	BDL	0.010	mg/l	6010B	01/10/07	1

BDL ~ Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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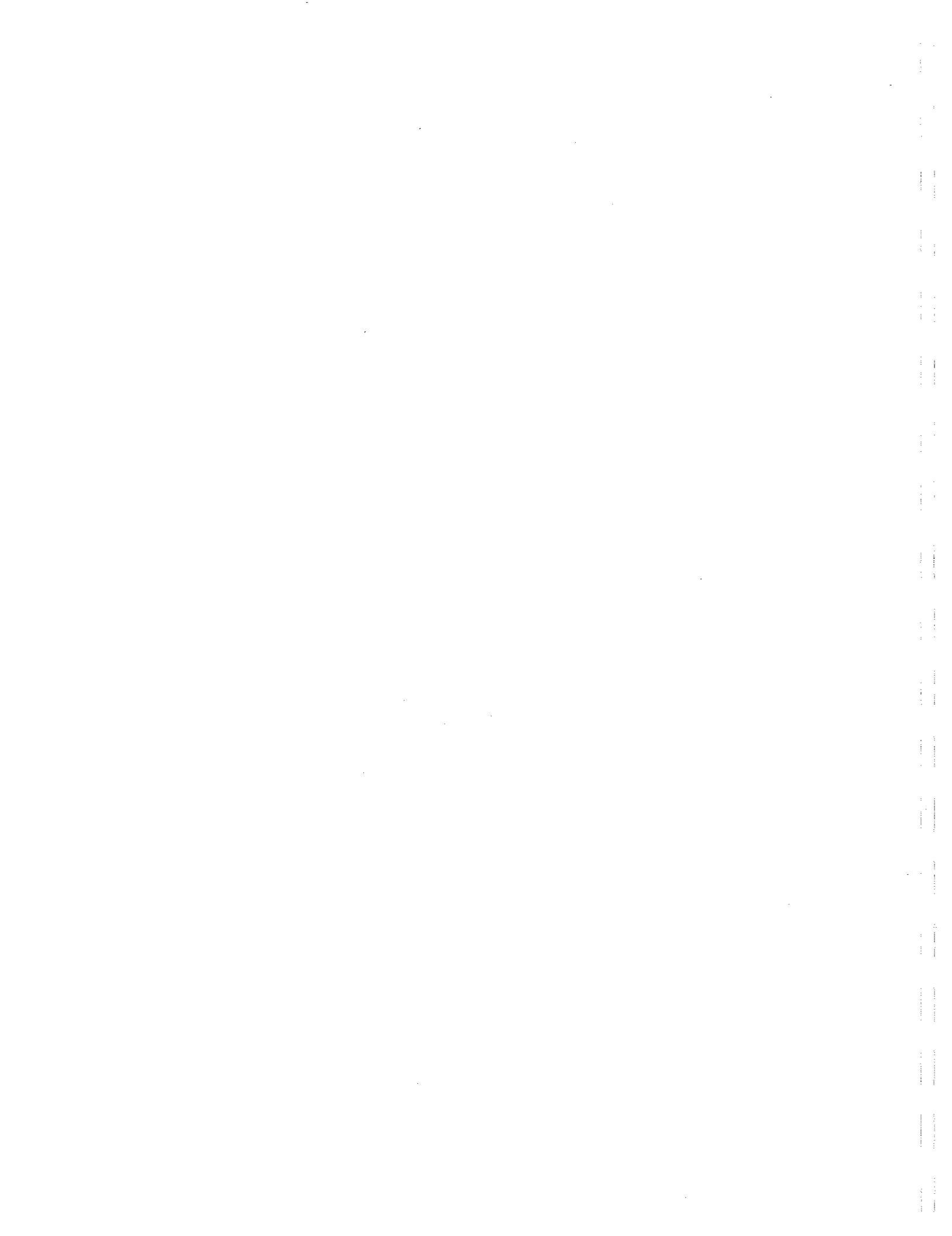
Reported: 01/11/07 08:38 Printed: 01/11/07 10:35

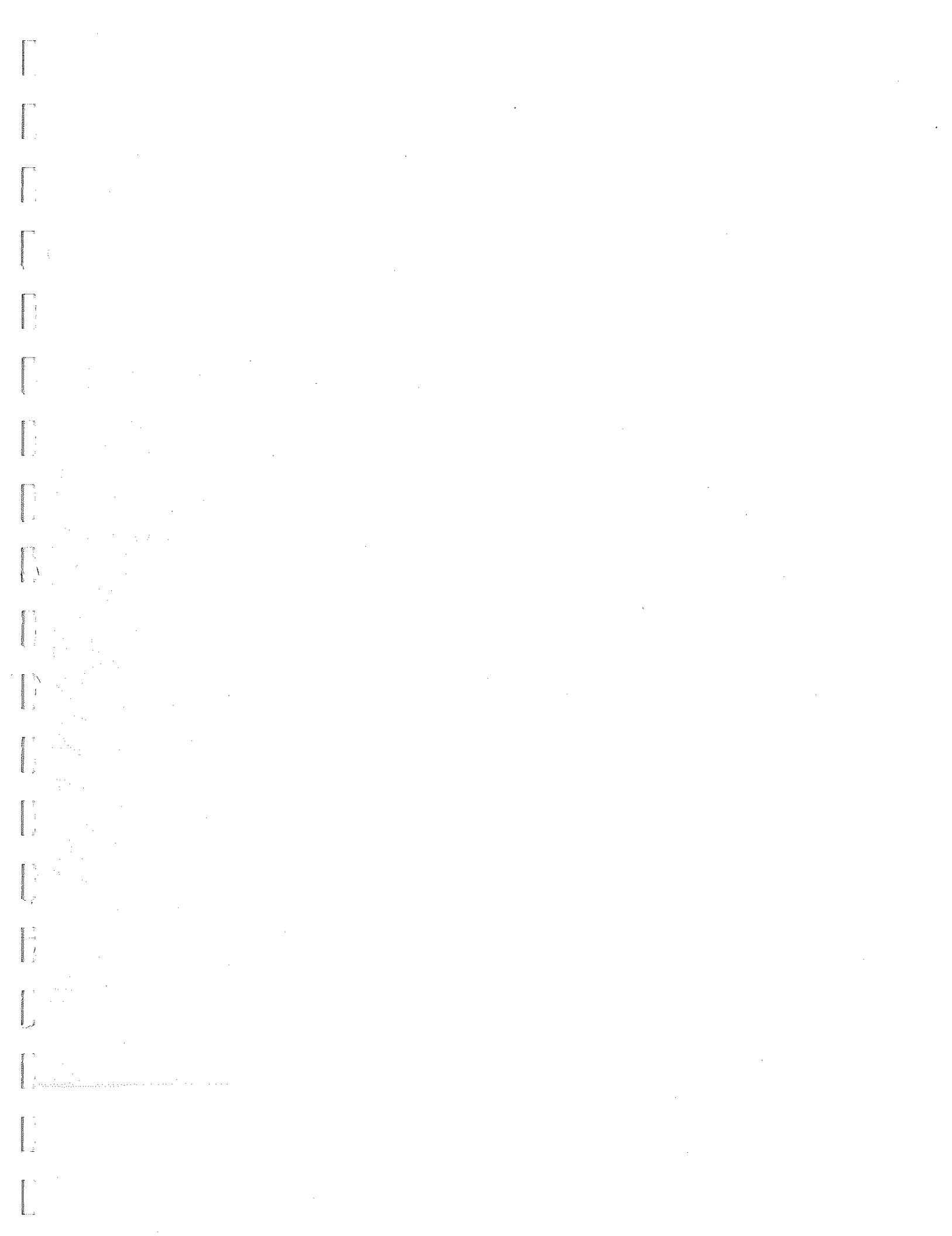
Summary of Remarks For Samples Printed  
01/11/07 at 10:35:43

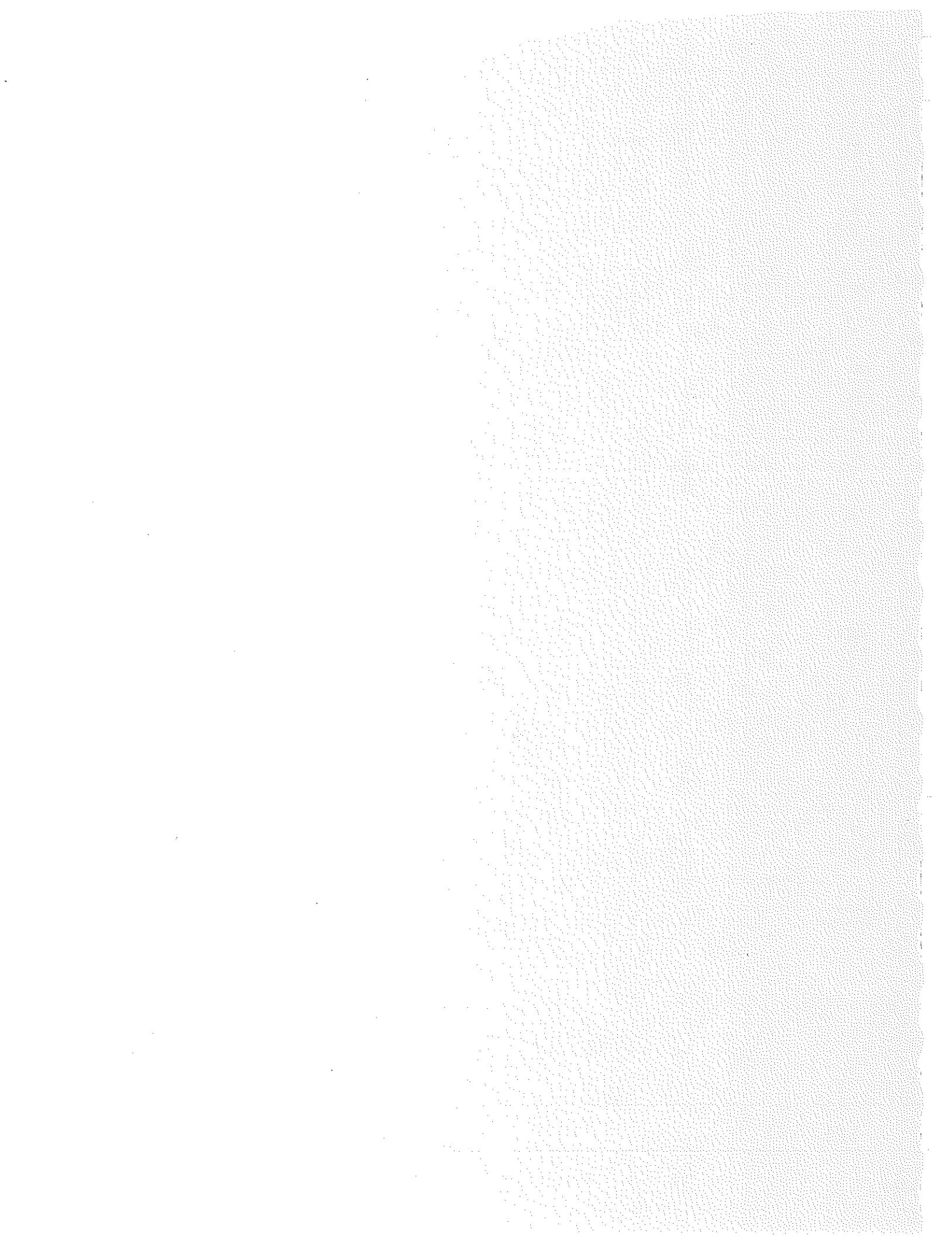
TSR Signing Reports: 134  
R5 - Desired TAT

EDD, QC2MOD; Always log metals by 6010

Sample: L275822-01 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-02 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-03 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-04 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-05 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-06 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-07 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-08 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD  
Sample: L275822-09 Account: APEXBOR Received: 01/09/07 09:00 Due Date: 01/15/07 00:00 RPT Date: 01/11/07 08:38  
EDD, QC2MOD









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Est. 1970

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place

Tigard, OR 97223

**Report Summary**

Thursday March 29, 2007

Report Number: L273714

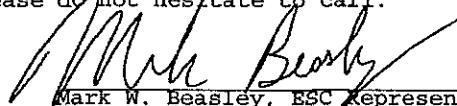
Samples Received: 12/16/06

Client Project: A612049

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Reviewed By:

  
Mark W. Beasley, ESC Representative

*Laboratory Certification Numbers*

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487  
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140  
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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**REPORT OF ANALYSIS**

March 29, 2007

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : December 16, 2006

ESC Sample # : L273714-01

Description :

Site ID :

Sample ID : A612049-01

Project # : A612049

Collected By :  
Collection Date : 12/13/06 13:56

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthene	U	0.00000018	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthylene	U	0.00000014	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)anthracene	U	0.00000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)pyrene	U	0.00000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(b)fluoranthene	U	0.00000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(g,h,i)perylene	U	0.00000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(k)fluoranthene	U	0.00000021	0.000050	mg/l		8270C-S	12/22/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/22/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/22/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/22/06	1
Fluorene	U	0.00000011	0.000050	mg/l		8270C-S	12/22/06	1
Indeno(1,2,3-cd)pyrene	U	0.00000012	0.000050	mg/l		8270C-S	12/22/06	1
Naphthalene	U	0.00000011	0.000025	mg/l		8270C-S	12/22/06	1
Phenanthrene	U	0.00000073	0.000050	mg/l		8270C-S	12/22/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/22/06	1
1-Methylnaphthalene	U	0.00000019	0.000025	mg/l		8270C-S	12/22/06	1
2-Methylnaphthalene	U	0.00000020	0.000025	mg/l		8270C-S	12/22/06	1
Surrogate Recovery								
Nitrobenzene-d5	71.6			% Rec.		8270C-S	12/22/06	1
2-Fluorobiphenyl	70.5			% Rec.		8270C-S	12/22/06	1
p-Terphenyl-d14	87.8			% Rec.		8270C-S	12/22/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.000077	0.000050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.000050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.000050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.000050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.000050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.000050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.000050	mg/l		8082	12/23/06	1
PCBs Surrogates								
Decachlorobiphenyl	72.5			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	81.3			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.020	0.060	mg/l		8270C	12/29/06	10
Bis(2-ethylhexyl)phthalate	0.011	0.013	0.010	mg/l		8270C	12/29/06	10
Benzylbutyl phthalate	U	0.010	0.010	mg/l		8270C	12/29/06	10
Diethyl phthalate	U	0.011	0.010	mg/l		8270C	12/29/06	10
Dimethyl phthalate	U	0.013	0.010	mg/l		8270C	12/29/06	10

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

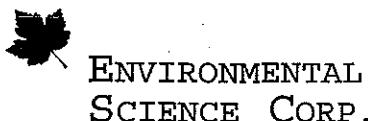
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

Note:

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REPORT OF ANALYSIS

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714~01

Description :

Site ID :

Sample ID : A612049-01

Project # : A612049

Collected By :

Collection Date : 12/13/06 13:56

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.011	0.010	mg/l		8270C	12/29/06	10
Di-n-octyl phthalate	U	0.0094	0.010	mg/l		8270C	12/29/06	10

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

Note:

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**REPORT OF ANALYSIS**

March 29, 2007

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : December 16, 2006

ESC Sample # : L273714-02

Description :

Site ID :

Sample ID : A612049-02

Project # : A612049

Collected By :  
Collection Date : 12/13/06 14:05

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/21/06	1
Acenaphthene	U	0.00000018	0.000050	mg/l		8270C-S	12/21/06	1
Acenaphthylene	U	0.00000014	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(a)anthracene	U	0.00000010	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(a)pyrene	U	0.00000011	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(b)fluoranthene	U	0.00000010	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(g,h,i)perylene	U	0.00000011	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(k)fluoranthene	U	0.00000021	0.000050	mg/l		8270C-S	12/21/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/21/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/21/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/21/06	1
Fluorene	U	0.00000011	0.000050	mg/l		8270C-S	12/21/06	1
Indeno(1,2,3-cd)pyrene	U	0.00000012	0.000050	mg/l		8270C-S	12/21/06	1
Naphthalene	U	0.00000011	0.000025	mg/l		8270C-S	12/21/06	1
Phenanthrene	U	0.00000073	0.000050	mg/l		8270C-S	12/21/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/21/06	1
1-Methylnaphthalene	U	0.00000019	0.000025	mg/l		8270C-S	12/21/06	1
2-Methylnaphthalene	U	0.00000020	0.000025	mg/l		8270C-S	12/21/06	1
Surrogate Recovery								
Nitrobenzene-d5	78.1			% Rec.		8270C-S	12/21/06	1
2-Fluorobiphenyl	74.2			% Rec.		8270C-S	12/21/06	1
p-Terphenyl-d14	92.3			% Rec.		8270C-S	12/21/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.000077	0.000050	mg/l		8082	12/23/06	1
PCB 1221	U	0.000016	0.000050	mg/l		8082	12/23/06	1
PCB 1232	U	0.000018	0.000050	mg/l		8082	12/23/06	1
PCB 1242	U	0.0000099	0.000050	mg/l		8082	12/23/06	1
PCB 1248	U	0.0000039	0.000050	mg/l		8082	12/23/06	1
PCB 1254	U	0.000012	0.000050	mg/l		8082	12/23/06	1
PCB 1260	U	0.000016	0.000050	mg/l		8082	12/23/06	1
PCBs Surrogates								
Decachlorobiphenyl	71.3			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	75.0			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	0.0022	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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REPORT OF ANALYSIS

March 29, 2007

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : December 16, 2006

ESC Sample # : L273714-02

Description :

Site ID :

Sample ID : A612049-02

Project # : A612049

Collected By :  
Collection Date : 12/13/06 14:05

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	0.0018	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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**REPORT OF ANALYSIS**

March 29, 2007

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

ESC Sample # : L273714-03

Date Received : December 16, 2006

Site ID :

Description :

Project # : A612049

Sample ID : A612049-03

Collected By :  
Collection Date : 12/13/06 14:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
<b>Polynuclear Aromatic Hydrocarbons</b>								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthene	U	0.0000018	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthylene	U	0.0000014	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)pyrene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(b)fluoranthene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(g,h,i)perylene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(k)fluoranthene	U	0.0000021	0.000050	mg/l		8270C-S	12/22/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/22/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/22/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/22/06	1
Fluorene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Indeno(1,2,3-cd)pyrene	U	0.0000012	0.000050	mg/l		8270C-S	12/22/06	1
Naphthalene	U	0.000011	0.00025	mg/l		8270C-S	12/22/06	1
Phenanthrene	U	0.0000073	0.000050	mg/l		8270C-S	12/22/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/22/06	1
1-Methylnaphthalene	U	0.0000019	0.00025	mg/l		8270C-S	12/22/06	1
2-Methylnaphthalene	U	0.0000020	0.00025	mg/l		8270C-S	12/22/06	1
<b>Surrogate Recovery</b>								
Nitrobenzene-d5	73.4			% Rec.		8270C-S	12/22/06	1
2-Fluorobiphenyl	72.5			% Rec.		8270C-S	12/22/06	1
p-Terphenyl-d14	92.4			% Rec.		8270C-S	12/22/06	1
<b>Polychlorinated Biphenyls</b>								
PCB 1016	U	0.000077	0.00050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.00050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.00050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.00050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.00050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.00050	mg/l		8082	12/23/06	1
<b>PCBs Surrogates</b>								
Decachlorobiphenyl	62.5			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	75.0			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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REPORT OF ANALYSIS

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714-03

Description :

Site ID :

Sample ID : A612049-03

Project # : A612049

Collected By :

Collection Date : 12/13/06 14:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	U	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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**REPORT OF ANALYSIS**

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714-04

Description :

Site ID :

Sample ID : A612049-04

Project # : A612049

Collected By :  
Collection Date : 12/13/06 14:35

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
<b>Polynuclear Aromatic Hydrocarbons</b>								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthene	U	0.0000018	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthyrene	U	0.0000014	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)pyrene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(b)fluoranthene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(g,h,i)perylene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(k)fluoranthene	U	0.0000021	0.000050	mg/l		8270C-S	12/22/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/22/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/22/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/22/06	1
Fluorene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Indeno(1,2,3-cd)pyrene	U	0.0000012	0.000050	mg/l		8270C-S	12/22/06	1
Naphthalene	U	0.000011	0.00025	mg/l		8270C-S	12/22/06	1
Phenanthrene	U	0.00000073	0.000050	mg/l		8270C-S	12/22/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/22/06	1
1-Methylnaphthalene	U	0.0000019	0.00025	mg/l		8270C-S	12/22/06	1
2-Methylnaphthalene	U	0.0000020	0.00025	mg/l		8270C-S	12/22/06	1
<b>Surrogate Recovery</b>								
Nitrobenzene-d5	71.5			% Rec.		8270C-S	12/22/06	1
2-Fluorobiphenyl	68.9			% Rec.		8270C-S	12/22/06	1
p-Terphenyl-d14	88.2			% Rec.		8270C-S	12/22/06	1
<b>Polychlorinated Biphenyls</b>								
PCB 1016	U	0.000077	0.00050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.00050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.00050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.00050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.00050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.00050	mg/l		8082	12/23/06	1
<b>PCBs Surrogates</b>								
Decachlorobiphenyl	71.3			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	75.0			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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## REPORT OF ANALYSIS

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714-04

Description :

Site ID :

Sample ID : A612049-04

Project # : A612049

Collected By :  
Collection Date : 12/13/06 14:35

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	U	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

Note:

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**REPORT OF ANALYSIS**

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006  
Description :

ESC Sample # : L273714-05

Sample ID : A612049-05

Site ID :

Collected By :  
Collection Date : 12/13/06 14:45

Project # : A612049

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthene	U	0.0000018	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthylene	U	0.0000014	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)pyrene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(b)fluoranthene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(g,h,i)perylene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(k)fluoranthene	U	0.0000021	0.000050	mg/l		8270C-S	12/22/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/22/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/22/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/22/06	1
Fluorene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Indeno(1,2,3-cd)pyrene	U	0.0000012	0.000050	mg/l		8270C-S	12/22/06	1
Naphthalene	U	0.000011	0.00025	mg/l		8270C-S	12/22/06	1
Phenanthrene	U	0.00000073	0.000050	mg/l		8270C-S	12/22/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/22/06	1
1-Methylnaphthalene	U	0.0000019	0.00025	mg/l		8270C-S	12/22/06	1
2-Methylnaphthalene	U	0.0000020	0.00025	mg/l		8270C-S	12/22/06	1
Surrogate Recovery								
Nitrobenzene-d5	67.2			% Rec.		8270C-S	12/22/06	1
2-Fluorobiphenyl	64.4			% Rec.		8270C-S	12/22/06	1
p-Terphenyl-d14	82.3			% Rec.		8270C-S	12/22/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.000077	0.00050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.00050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.00050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.00050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.00050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCBs Surrogates								
Decachlorobiphenyl	65.0			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	77.5			% Rec.		8082	12/23/06	1
Total Phthalates	0.0099	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	0.0089	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

Note:

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714-05

Description :

Sample ID : A612049-05

Site ID :

Collected By :  
Collection Date : 12/13/06 14:45

Project # : A612049

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	0.0011	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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**REPORT OF ANALYSIS**

March 29, 2007

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : December 16, 2006

ESC Sample # : L273714-06

Description :

Site ID :

Sample ID : A612049-06

Project # : A612049

Collected By :  
Collection Date : 12/13/06 15:00

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthene	U	0.0000018	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthylene	U	0.0000014	0.000050	mg/l		8270C-S	12/22/06	1
Benz(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benz(a)pyrene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benz(b)fluoranthene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benz(g,h,i)perylene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benz(k)fluoranthene	U	0.0000021	0.000050	mg/l		8270C-S	12/22/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/22/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/22/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/22/06	1
Fluorene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Indeno(1,2,3-cd)pyrene	U	0.0000012	0.000050	mg/l		8270C-S	12/22/06	1
Naphthalene	U	0.000011	0.00025	mg/l		8270C-S	12/22/06	1
Phenanthrene	U	0.00000073	0.000050	mg/l		8270C-S	12/22/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/22/06	1
1-Methylnaphthalene	U	0.0000019	0.00025	mg/l		8270C-S	12/22/06	1
2-Methylnaphthalene	U	0.0000020	0.00025	mg/l		8270C-S	12/22/06	1
Surrogate Recovery								
Nitrobenzene-d5	71.8			% Rec.		8270C-S	12/22/06	1
2-Fluorobiphenyl	69.0			% Rec.		8270C-S	12/22/06	1
p-Terphenyl-d14	82.8			% Rec.		8270C-S	12/22/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.000077	0.00050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.00050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.00050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.00050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.00050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCBs Surrogates								
Decachlorobiphenyl	50.0			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	58.8			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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REPORT OF ANALYSIS

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006  
Description :

ESC Sample # : L273714-06

Sample ID : A612049-06

Site ID :

Collected By :  
Collection Date : 12/13/06 15:00

Project # : A612049

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	U	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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**REPORT OF ANALYSIS**

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714-07

Description :

Site ID :

Sample ID : A612049-07

Project # : A612049

Collected By :  
Collection Date : 12/13/06 15:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/21/06	1
Acenaphthene	U	0.0000018	0.000050	mg/l		8270C-S	12/21/06	1
Acenaphthylene	U	0.0000014	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(a)pyrene	U	0.0000011	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(b)fluoranthene	U	0.0000010	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(g,h,i)perylene	U	0.0000011	0.000050	mg/l		8270C-S	12/21/06	1
Benzo(k)fluoranthene	U	0.0000021	0.000050	mg/l		8270C-S	12/21/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/21/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/21/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/21/06	1
Fluorene	U	0.0000011	0.000050	mg/l		8270C-S	12/21/06	1
Indeno(1,2,3-cd)pyrene	U	0.0000012	0.000050	mg/l		8270C-S	12/21/06	1
Naphthalene	U	0.000011	0.00025	mg/l		8270C-S	12/21/06	1
Phenanthrene	U	0.00000073	0.000050	mg/l		8270C-S	12/21/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/21/06	1
1-Methylnaphthalene	U	0.0000019	0.00025	mg/l		8270C-S	12/21/06	1
2-Methylnaphthalene	U	0.0000020	0.00025	mg/l		8270C-S	12/21/06	1
Surrogate Recovery								
Nitrobenzene-d5	80.3			% Rec.		8270C-S	12/21/06	1
2-Fluorobiphenyl	77.3			% Rec.		8270C-S	12/21/06	1
p-Terphenyl-d14	86.2			% Rec.		8270C-S	12/21/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.000077	0.00050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.00050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.00050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.00050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.00050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCBs Surrogates								
Decachlorobiphenyl	56.3			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	62.5			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	0.0014	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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REPORT OF ANALYSIS

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714-07

Description :

Site ID :

Sample ID : A612049-07

Project # : A612049

Collected By :

Collection Date : 12/13/06 15:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	U	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

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RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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**REPORT OF ANALYSIS**

March 29, 2007

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : December 16, 2006

ESC Sample # : L273714-08

Description :

Site ID :

Sample ID : A612049-08

Project # : A612049

Collected By :

Collection Date : 12/13/06 15:10

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthene	U	0.0000018	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthylene	U	0.0000014	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)pyrene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(b)fluoranthene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(g,h,i)perylene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(k)fluoranthene	U	0.0000021	0.000050	mg/l		8270C-S	12/22/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/22/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/22/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/22/06	1
Fluorene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Indeno(1,2,3-cd)pyrene	U	0.0000012	0.000050	mg/l		8270C-S	12/22/06	1
Naphthalene	U	0.0000011	0.000025	mg/l		8270C-S	12/22/06	1
Phenanthrene	U	0.00000073	0.000050	mg/l		8270C-S	12/22/06	1
Pyrene	U	0.00000083	0.000050	mg/l		8270C-S	12/22/06	1
1-Methylnaphthalene	U	0.0000019	0.000025	mg/l		8270C-S	12/22/06	1
2-Methylnaphthalene	U	0.0000020	0.000025	mg/l		8270C-S	12/22/06	1
Surrogate Recovery								
Nitrobenzene-d5	63.0			% Rec.		8270C-S	12/22/06	1
2-Fluorobiphenyl	69.4			% Rec.		8270C-S	12/22/06	1
p-Terphenyl-d14	85.0			% Rec.		8270C-S	12/22/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.000077	0.00050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.00050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.00050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.00050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.00050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCBs Surrogates								
Decachlorobiphenyl	68.8			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	81.3			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	0.0019	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	0.0038	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

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RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

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REPORT OF ANALYSIS

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006

ESC Sample # : L273714-08

Description :

Site ID :

Sample ID : A612049-08

Project # : A612049

Collected By :

Collection Date : 12/13/06 15:10

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	U	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

Note:

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Reported: 03/29/07 12:30 Printed: 03/29/07 15:09



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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

**REPORT OF ANALYSIS**

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

March 29, 2007

Date Received : December 16, 2006  
Description :

ESC Sample # : L273714-09

Sample ID : A612049-09

Site ID :

Collected By :  
Collection Date : 12/13/06 15:45

Project # : A612049

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Oil & Grease (Hexane Extr)	U	1.7	5.0	mg/l		1664A	12/22/06	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00000045	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthene	U	0.0000018	0.000050	mg/l		8270C-S	12/22/06	1
Acenaphthylene	U	0.0000014	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(a)pyrene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(b)fluoranthene	U	0.0000010	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(g,h,i)perylene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Benzo(k)fluoranthene	U	0.0000021	0.000050	mg/l		8270C-S	12/22/06	1
Chrysene	U	0.00000068	0.000050	mg/l		8270C-S	12/22/06	1
Dibenz(a,h)anthracene	U	0.00000096	0.000050	mg/l		8270C-S	12/22/06	1
Fluoranthene	U	0.00000065	0.000050	mg/l		8270C-S	12/22/06	1
Fluorene	U	0.0000011	0.000050	mg/l		8270C-S	12/22/06	1
Indeno(1,2,3-cd)pyrene	U	0.0000012	0.000050	mg/l		8270C-S	12/22/06	1
Naphthalene	U	0.000011	0.00025	mg/l		8270C-S	12/22/06	1
Phenanthrene	0.000054	0.0000073	0.000050	mg/l		8270C-S	12/22/06	1
Pyrene	U	0.0000083	0.000050	mg/l		8270C-S	12/22/06	1
1-Methylnaphthalene	U	0.0000019	0.00025	mg/l		8270C-S	12/22/06	1
2-Methylnaphthalene	U	0.0000020	0.00025	mg/l		8270C-S	12/22/06	1
Surrogate Recovery								
Nitrobenzene-d5	77.4			% Rec.		8270C-S	12/22/06	1
2-Fluorobiphenyl	72.5			% Rec.		8270C-S	12/22/06	1
p-Terphenyl-d14	89.3			% Rec.		8270C-S	12/22/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.000077	0.00050	mg/l		8082	12/23/06	1
PCB 1221	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCB 1232	U	0.00018	0.00050	mg/l		8082	12/23/06	1
PCB 1242	U	0.000099	0.00050	mg/l		8082	12/23/06	1
PCB 1248	U	0.000039	0.00050	mg/l		8082	12/23/06	1
PCB 1254	U	0.00012	0.00050	mg/l		8082	12/23/06	1
PCB 1260	U	0.00016	0.00050	mg/l		8082	12/23/06	1
PCBs Surrogates								
Decachlorobiphenyl	65.0			% Rec.		8082	12/23/06	1
Tetrachloro-m-xylene	81.3			% Rec.		8082	12/23/06	1
Total Phthalates	U	0.0020	0.0060	mg/l		8270C	12/27/06	1
Bis(2-ethylhexyl)phthalate	0.0015	0.0013	0.0010	mg/l		8270C	12/27/06	1
Benzylbutyl phthalate	U	0.0010	0.0010	mg/l		8270C	12/27/06	1
Diethyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Dimethyl phthalate	U	0.0013	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

Note:

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Est. 1970

REPORT OF ANALYSIS

March 29, 2007

Darwin Thomas  
Apex Laboratories  
12232 S.W. Garden Place  
Tigard, OR 97223

Date Received : December 16, 2006

ESC Sample # : L273714-09

Description :

Site ID :

Sample ID : A612049-09

Project # : A612049

Collected By :

Collection Date : 12/13/06 15:45

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-n-butyl phthalate	U	0.0011	0.0010	mg/l		8270C	12/27/06	1
Di-n-octyl phthalate	U	0.00094	0.0010	mg/l		8270C	12/27/06	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 03/29/07 12:30 Printed: 03/29/07 15:09

Summary of Remarks For Samples Printed  
03/29/07 at 15:09:22

TSR Signing Reports: 134  
R5 - Desired TAT

EDD, QC2MOD; Always log metals by 6010; Log A# as project number; Always log dry weight for soils

Sample: L273714-01 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD; uninvoiced-cb 3/28; Reinvoiced-cb 3/29  
Sample: L273714-02 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD  
Sample: L273714-03 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD  
Sample: L273714-04 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD  
Sample: L273714-05 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD  
Sample: L273714-06 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD  
Sample: L273714-07 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD  
Sample: L273714-08 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD  
Sample: L273714-09 Account: APEXBOR Received: 12/16/06 09:00 Due Date: 12/21/06 00:00 RPT Date: 03/29/07 12:30  
EDD, QC2MOD



# Environmental Science Corporation

## Quality Control Summary Apex Laboratories

*Test:* Oil & Grease (Hexane Extr) by Method 1664A

QAD6972

*Matrix:* Water - mg/L

*Project No:* A612049

*Login No:* L273714

*Sample Number:* L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

*Sample Date:* 12/13/2006

*Extraction Date:* 12/22/2006

*Analysis Date:* 12/22/2006 1:27:00 PM

*Instrument ID:* BAL

*Analyst:* 164

*Analytic Batch:* WG280580

EPA ID: TN00003

### Method Blank

Analyte	CAS	PQL
Oil & Grease (Hexane Extr)		<5.00

### Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Oil & Grease (Hexane Extr)	40.0	39.0	97.5	78 - 114	

### Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Oil & Grease (Hexane Extr)	40.0	41.0	102	78 - 114	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Oil & Grease (Hexane Extr) by Method 1664A

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

Sample Date: 12/13/2006

Extraction Date: 12/22/2006

Analysis Date: 12/22/2006 1:27:00 PM

Instrument ID: BAL

Analyst: 164

Analytic Batch: WG280580

EPA ID: TN00003

#### Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Qualifier	Control RPD	Control Limits	Qualifier
Oil & Grease (Hexane)	40.0	39.0	97.5	41.0	102	78-114		5.0	20	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Oil & Grease (Hexane Extr) by Method 1664A

QAD6972

Matrix: Water - mg/L units

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

Sample Date: 12/13/2006

Extraction Date: 12/22/2006

Analysis Date: 12/22/2006 1:27:00 PM

Instrument ID: BAL

Analytic Batch: WG280580

---

#### Method Blank Summary

Client Sample ID	Laboratory Sample ID	Lab Filename	Instrument	Date Analyzed	Time Analyzed
Blank WG280580	Blank WG280580		BAL	12/22/2006	12:33 PM
LCS WG280580	LCS WG280580		BAL	12/22/2006	12:34 PM
LCSD WG280580	LCSD WG280580		BAL	12/22/2006	12:34 PM
A612049-03	L273714-03		BAL	12/22/2006	1:26 PM
A612049-01	L273714-01		BAL	12/22/2006	1:27 PM
A612049-02	L273714-02		BAL	12/22/2006	1:27 PM
A612049-04	L273714-04		BAL	12/22/2006	1:27 PM
A612049-05	L273714-05		BAL	12/22/2006	1:28 PM
A612049-09	L273714-09		BAL	12/22/2006	1:28 PM
A612049-06	L273714-06		BAL	12/22/2006	1:29 PM
A612049-07	L273714-07		BAL	12/22/2006	1:29 PM
A612049-08	L273714-08		BAL	12/22/2006	1:29 PM



# Environmental Science Corporation

## Quality Control Summary Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-07, -09

Sample Date: 12/13/2006

Extraction Date: 12/20/2006

Analysis Date: 12/24/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280220

EPA ID: TN00003

### Method Blank

Analyte	CAS	PQL
Dimethyl phthalate	131-11-3	<0.0100
Diethyl phthalate	84-66-2	<0.0100
Di-n-butyl phthalate	84-74-2	<0.0100
Benzylbutyl phthalate	85-68-7	<0.0100
Bis(2-ethylhexyl)phthalate	117-81-7	<0.0100
Di-n-octyl phthalate	117-84-0	<0.0100



# Environmental Science Corporation

## Quality Control Summary Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -08

Sample Date: 12/13/2006

Extraction Date: 12/22/2006

Analysis Date: 12/23/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280593

EPA ID: TN00003

### Method Blank

Analyte	CAS	PQL
Dimethyl phthalate	131-11-3	<0.0100
Diethyl phthalate	84-66-2	<0.0100
Di-n-butyl phthalate	84-74-2	<0.0100
Benzylbutyl phthalate	85-68-7	<0.0100
Bis(2-ethylhexyl)phthalate	117-81-7	<0.0100
Di-n-octyl phthalate	117-84-0	<0.0100



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C-SIM

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

Sample Date: 12/13/2006

Extraction Date: 12/19/2006

Analysis Date: 12/21/2006

Instrument ID: BNAMS3

Analyst: 110

Analytic Batch: WG280132

EPA ID: TN00003

#### Method Blank

Analyte	CAS	PQL
Naphthalene	91-20-3	<0.0100
2-Methylnaphthalene	91-57-6	<0.0100
1-Methylnaphthalene	90-12-0	<0.0100
Acenaphthylene	208-96-8	<0.0100
Acenaphthene	83-32-9	<0.0100
Fluorene	86-73-7	<0.0100
Phenanthrene	85-01-8	<0.0100
Anthracene	120-12-7	<0.0100
Fluoranthene	206-44-0	<0.0100
Pyrene	129-00-0	<0.0100
Benzo(a)anthracene	56-55-3	<0.0100
Chrysene	218-01-9	<0.0100
Benzo(b)fluoranthene	205-99-2	<0.0100
Benzo(k)fluoranthene	207-08-9	<0.0100
Benzo(a)pyrene	50-32-8	<0.0100
Indeno(1,2,3-cd)pyrene	193-39-5	<0.0100
Dibenz(a,h)anthracene	53-70-3	<0.0100
Benzo(g,h,i)perylene	191-24-2	<0.0100



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C-SIM

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

Sample Date: 12/13/2006

Extraction Date: 12/19/2006

Analysis Date: 12/21/2006

Instrument ID: BNAMS3

Analyst: 110

Analytic Batch: WG280132

EPA ID: TN00003

#### Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Naphthalene	0.00500	0.00330	66.0	52 - 117	
2-Methylnaphthalene	0.00500	0.00335	67.1	53 - 115	
1-Methylnaphthalene	0.00500	0.00356	71.2	51 - 120	
Acenaphthylene	0.00100	0.000699	69.9	51 - 142	
Acenaphthene	0.00100	0.000720	72.0	53 - 124	
Fluorene	0.00100	0.000719	71.9	59 - 121	
Phenanthrene	0.00100	0.000743	74.3	54 - 120	
Anthracene	0.00100	0.000736	73.6	53 - 133	
Fluoranthene	0.00100	0.000749	74.9	55 - 136	
Pyrene	0.00100	0.000735	73.5	55 - 115	
Benzo(a)anthracene	0.00100	0.000762	76.2	54 - 127	
Chrysene	0.00100	0.000741	74.1	52 - 133	
Benzo(b)fluoranthene	0.00100	0.000774	77.4	47 - 137	
Benzo(k)fluoranthene	0.00100	0.000822	82.2	50 - 137	
Benzo(a)pyrene	0.00100	0.000794	79.4	52 - 142	
Indeno(1,2,3-cd)pyrene	0.00100	0.000784	78.4	42 - 142	
Dibenz(a,h)anthracene	0.00100	0.000759	75.9	44 - 140	
Benzo(g,h,i)perylene	0.00100	0.000776	77.6	38 - 145	



# Environmental Science Corporation

## Quality Control Summary Apex Laboratories

Test: Semi-Volatiles by Method 8270C-SIM

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

Sample Date: 12/13/2006

Extraction Date: 12/19/2006

Analysis Date: 12/21/2006

Instrument ID: BNAMS3

Analyst: 110

Analytic Batch: WG280132

EPA ID: TN00003

### Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Naphthalene	0.00500	0.00325	64.9	52 - 117	
2-Methylnaphthalene	0.00500	0.00352	70.3	53 - 115	
1-Methylnaphthalene	0.00500	0.00349	69.8	51 - 120	
Acenaphthylene	0.00100	0.000695	69.5	51 - 142	
Acenaphthene	0.00100	0.000676	67.6	53 - 124	
Fluorene	0.00100	0.000684	68.4	59 - 121	
Phenanthrene	0.00100	0.000717	71.7	54 - 120	
Anthracene	0.00100	0.000713	71.3	53 - 133	
Fluoranthene	0.00100	0.000710	71.0	55 - 136	
Pyrene	0.00100	0.000771	77.1	55 - 115	
Benzo(a)anthracene	0.00100	0.000741	74.1	54 - 127	
Chrysene	0.00100	0.000753	75.3	52 - 133	
Benzo(b)fluoranthene	0.00100	0.000813	81.3	47 - 137	
Benzo(k)fluoranthene	0.00100	0.000731	73.1	50 - 137	
Benzo(a)pyrene	0.00100	0.000763	76.3	52 - 142	
Indeno(1,2,3-cd)pyrene	0.00100	0.000730	73.0	42 - 142	
Dibenz(a,h)anthracene	0.00100	0.000727	72.7	44 - 140	
Benzo(g,h,i)perylene	0.00100	0.000731	73.1	38 - 145	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-07, -09

Sample Date: 12/13/2006

Extraction Date: 12/20/2006

Analysis Date: 12/24/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280220

EPA ID: TN00003

#### Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Dimethyl phthalate	0.0400	0.0293	73.2	56 - 112	
Diethyl phthalate	0.0400	0.0305	76.3	58 - 114	
Di-n-butyl phthalate	0.0400	0.0315	78.7	58 - 118	
Benzylbutyl phthalate	0.0400	0.0311	77.8	59 - 148	
Bis(2-ethylhexyl)phthalate	0.0400	0.0280	69.9	56 - 146	
Di-n-octyl phthalate	0.0400	0.0285	71.1	58 - 145	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-07, -09

Sample Date: 12/13/2006

Extraction Date: 12/20/2006

Analysis Date: 12/24/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280220

EPA ID: TN00003

#### Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Dimethyl phthalate	0.0400	0.0292	73.0	56 - 112	
Diethyl phthalate	0.0400	0.0318	79.4	58 - 114	
Di-n-butyl phthalate	0.0400	0.0296	74.1	58 - 118	
Benzylbutyl phthalate	0.0400	0.0313	78.3	59 - 148	
Bis(2-ethylhexyl)phthalate	0.0400	0.0274	68.4	56 - 146	
Di-n-octyl phthalate	0.0400	0.0272	68.1	58 - 145	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -08

Sample Date: 12/13/2006

Extraction Date: 12/22/2006

Analysis Date: 12/23/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280593

EPA ID: TN00003

#### Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Dimethyl phthalate	0.0400	0.0344	86.0	56 - 112	
Diethyl phthalate	0.0400	0.0360	90.1	58 - 114	
Di-n-butyl phthalate	0.0400	0.0371	92.6	58 - 118	
Benzylbutyl phthalate	0.0400	0.0385	96.2	59 - 148	
Bis(2-ethylhexyl)phthalate	0.0400	0.0354	88.4	56 - 146	
Di-n-octyl phthalate	0.0400	0.0356	89.0	58 - 145	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -08

Sample Date: 12/13/2006

Extraction Date: 12/22/2006

Analysis Date: 12/23/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280593

EPA ID: TN00003

#### Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Dimethyl phthalate	0.0400	0.0344	86.1	56 - 112	
Diethyl phthalate	0.0400	0.0351	87.8	58 - 114	
Di-n-butyl phthalate	0.0400	0.0357	89.2	58 - 118	
Benzylbutyl phthalate	0.0400	0.0335	83.8	59 - 148	
Bis(2-ethylhexyl)phthalate	0.0400	0.0314	78.6	56 - 146	
Di-n-octyl phthalate	0.0400	0.0354	88.6	58 - 145	



# Environmental Science Corporation

## Quality Control Summary Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-07, -09

Sample Date: 12/13/2006

Extraction Date: 12/20/2006

Analysis Date: 12/24/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280220

EPA ID: TN00003

### Surrogate Summary

Laboratory	NBZ	FBP	TPH	2FP	PHL	TBP				
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
Blank WG280220	0.0248	61.9	0.0281	70.2	0.0365	91.3	0.0519	64.8	0.0510	63.8
LCS WG280220	0.0260	64.9	0.0296	74.1	0.0340	85.0	0.0512	64.0	0.0486	60.7
LCSD WG280220	0.0249	62.3	0.0298	74.4	0.0352	88.0	0.0474	59.2	0.0466	58.2
L273714-07	0.0269	67.2	0.0296	73.9	0.0376	94.0	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
L273714-09	0.0295	73.8	0.0336	84.0	0.0473	118	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

NBZ - Nitrobenzene-d5	31-109
FBP - 2-Fluorobiphenyl	51-113
TPH - Terphneyl-d14	55-142
2FP - 2-Fluorophenol	20-99
PHL - Phenol-d5	16-100
TBP - 2,4,6-Tribromophenol	34-142



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -08

Sample Date: 12/13/2006

Extraction Date: 12/22/2006

Analysis Date: 12/23/2006

Instrument ID: BNAMS2

Analyst: 385

Analytic Batch: WG280593

EPA ID: TN00003

#### Surrogate Summary

Laboratory	NBZ		FBP		TPH		2FP		PHL		TBP	
Sample ID	ppb	% Rec	ppb	% Rec								
Blank WG280593	0.0282	70.4	0.0334	83.6	0.0353	88.2	0.0392	49.0	0.0479	59.9	0.0441	55.2
LCS WG280593	0.0274	68.4	0.0316	79.0	0.0390	97.5	0.0458	57.2	0.0509	63.7	0.0706	88.3
LCSD WG280593	0.0280	70.0	0.0342	85.4	0.0346	86.6	0.0491	61.4	0.0512	64.0	0.0650	81.3
L273714-01	0.0318	79.4	0.0423	106	0.0428	107			0.0003	0.4	* 0.0006	0.8 *
L273714-02	0.0351	87.7	0.0362	90.5	0.0449	112			0.0002	0.3	* 0.0000	0.1 *
L273714-03	0.0270	67.6	0.0312	78.0	0.0394	98.5			0.0001	0.1	* 0.0000	0.0 *
L273714-04	0.0337	84.3	0.0360	90.1	0.0462	115			0.0002	0.3	* 0.0000	0.1 *
L273714-05	0.0318	79.6	0.0353	88.2	0.0388	97.0			0.0001	0.2	* 0.0000	0.0 *
L273714-06	0.0362	90.5	0.0394	98.4	0.0430	107			0.0001	0.2	* 0.0000	0.1 *
L273714-08	0.0230	57.6	0.0289	72.2	0.0394	98.4			0.0001	0.2	* 0.0000	0.0 *

NBZ - Nitrobenzene-d5	31-109
FBP - 2-Fluorobiphenyl	51-113
TPH - Terphnetyl-d14	55-142
2FP - 2-Fluorophenol	20-99
PHL - Phenol-d5	16-100
TBP - 2,4,6-Tribromophenol	34-142



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C-SIM

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

EPA ID: TN00003

Analysis Date: 12/21/2006

Instrument ID: BNAMS3

Analytic Batch: WG280132

#### Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	% LCSD	Control Limits	% Qualifier	Control RPD	Control Limits	Qualifier
Naphthalene	0.00500	0.00330	66.0	0.00325	64.9	52-117	1.6	34	
2-Methylnaphthalene	0.00500	0.00335	67.1	0.00352	70.3	53-115	4.7	32	
1-Methylnaphthalene	0.00500	0.00356	71.2	0.00349	69.8	51-120	1.9	32	
Acenaphthylene	0.00100	0.00069	69.9	0.00069	69.5	51-142	0.6	26	
Acenaphthene	0.00100	0.00072	72.0	0.00067	67.6	53-124	6.3	25	
Fluorene	0.00100	0.00071	71.9	0.00068	68.4	59-121	5.0	20	
Phenanthrene	0.00100	0.00074	74.3	0.00071	71.7	54-120	3.6	17	
Anthracene	0.00100	0.00073	73.6	0.00071	71.3	53-133	3.1	17	
Fluoranthene	0.00100	0.00074	74.9	0.00071	71.0	55-136	5.3	17	
Pyrene	0.00100	0.00073	73.5	0.00077	77.1	55-115	4.8	17	
Benz(a)anthracene	0.00100	0.00076	76.2	0.00074	74.1	54-127	2.8	17	
Chrysene	0.00100	0.00074	74.1	0.00075	75.3	52-133	1.6	17	
Benz(b)fluoranthene	0.00100	0.00077	77.4	0.00081	81.3	47-137	4.9	18	
Benz(k)fluoranthene	0.00100	0.00082	82.2	0.00073	73.1	50-137	12	20	
Benz(a)pyrene	0.00100	0.00079	79.4	0.00076	76.3	52-142	4.0	17	
Indeno(1,2,3-cd)pyrene	0.00100	0.00078	78.4	0.00073	73.0	42-142	7.2	20	
Dibenz(a,h)anthracene	0.00100	0.00075	75.9	0.00072	72.7	44-140	4.3	17	
Benzo(g,h,i)perylene	0.00100	0.00077	77.6	0.00073	73.1	38-145	6.0	16	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-07, -09

EPA ID: TN00003

Analysis Date: 12/24/2006

Instrument ID: BNAMS2

Analytic Batch: WG280220

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#### Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Qualifier	RPD	Control Limits	Qualifier
Dimethyl phthalate	0.0400	0.0293	73.2	0.0292	73.0	56-112		0.4	16	
Diethyl phthalate	0.0400	0.0305	76.3	0.0318	79.4	58-114		4.0	16	
Di-n-butyl phthalate	0.0400	0.0315	78.7	0.0296	74.1	58-118		6.1	18	
Benzylbutyl phthalate	0.0400	0.0311	77.8	0.0313	78.3	59-148		0.6	18	
Bis(2-ethylhexyl)phthalate	0.0400	0.0280	69.9	0.0274	68.4	56-146		2.1	18	
Di-n-octyl phthalate	0.0400	0.0285	71.1	0.0272	68.1	58-145		4.4	18	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Semi-Volatiles by Method 8270C

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -08

EPA ID: TN00003

Analysis Date: 12/23/2006

Instrument ID: BNAMS2

Analytic Batch: WG280593

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#### Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	% LCSD	Control Rec	Control Limits	% Qualifier	RPD	Control Limits	Qualifier
Dimethyl phthalate	0.0400	0.0344	86.0	0.0344	86.1	56-112		0.1	16	
Diethyl phthalate	0.0400	0.0360	90.1	0.0351	87.8	58-114		2.6	16	
Di-n-butyl phthalate	0.0400	0.0371	92.6	0.0357	89.2	58-118		3.8	18	
Benzylbutyl phthalate	0.0400	0.0385	96.2	0.0335	83.8	59-148		14	18	
Bis(2-ethylhexyl)phthalate	0.0400	0.0354	88.4	0.0314	78.6	56-146		12	18	
Di-n-octyl phthalate	0.0400	0.0356	89.0	0.0354	88.6	58-145		0.5	18	



# Environmental Science Corporation

## Quality Control Summary Apex Laboratories

Test: Polychlorinated Biphenyls by Method 8082

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

Sample Date: 12/13/2006

Extraction Date: 12/19/2006

Analysis Date: 12/23/2006

Instrument ID: SVGC18

Analyst: 82

Analytic Batch: WG280127

EPA ID: TN00003

### Method Blank

Analyte	CAS	PQL
PCB 1016	12674-11-2	<0.000500
PCB 1221	11104-28-2	<0.000500
PCB 1232	11141-16-5	<0.000500
PCB 1242	53469-21-9	<0.000500
PCB 1248	12672-29-6	<0.000500
PCB 1254	11097-69-1	<0.000500
PCB 1260	11096-82-5	<0.000500

### Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
PCB 1260	0.00200	0.00161	80.5	48 - 105	
PCB 1260	0.00200	0.00188	93.9	46 - 113	

### Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
PCB 1260	0.00200	0.00180	90.0	48 - 105	
PCB 1260	0.00200	0.00196	97.9	46 - 113	



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

Test: Polychlorinated Biphenyls by Method 8082

QAD6972

Matrix: Water - mg/L

Project No: A612049

Login No: L273714

Sample Number: L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

Sample Date: 12/13/2006

Extraction Date: 12/19/2006

Analysis Date: 12/23/2006

Instrument ID: SVGC18

Analyst: 82

Analytic Batch: WG280127

EPA ID: TN00003

#### Surrogate Summary

Laboratory Sample ID	TCX Col 1		TCX Col 2		DCB Col 1		DCB Col 2	
	ppm	% Rec						
Blank WG280127	0.00043	53.8	0.0004	60.0	0.0006	77.5	0.0006	81.2
LCS WG280127	0.00048	60.0	0.0005	66.2	0.0007	95.0	0.0007	96.2
LCSD WG280127	0.00050	62.5	0.0005	66.2	0.0008	100	0.0007	97.5
L273714-03	0.00055	68.8	0.0006	75.0	0.0004	57.5	0.0005	62.5
L273714-04	0.00048	60.0	0.0006	75.0	0.0004	53.8	0.0005	71.2
L273714-05	0.00056	70.0	0.0006	77.5	0.0004	60.0	0.0005	65.0
L273714-06	0.00041	51.2	0.0004	58.8	0.0003	42.5	0.0004	50.0
L273714-07	0.00045	56.2	0.0005	62.5	0.0003	43.8	0.0004	56.2
L273714-08	0.00054	67.5	0.0006	81.2	0.0004	53.8	0.0005	68.8
L273714-09	0.00052	65.0	0.0006	81.2	0.0004	50.0	0.0005	65.0
L273714-02	0.00048	60.0	0.0006	75.0	0.0004	52.5	0.0005	71.2
L273714-01	0.00059	73.8	0.0006	81.2	0.0004	60.0	0.0005	72.5

Column 1

TCMX

DCB

Column 2

TCMX

DCB

Limits -34 - 108

Limits -35 - 130

Limits -38 - 108

Limits -31 - 130



# Environmental Science Corporation

## Quality Control Summary

### Apex Laboratories

**Test:** Polychlorinated Biphenyls by Method 8082

QAD6972

**Matrix:** Water - mg/L

**Project No:** A612049

**Login No:** L273714

**Sample Number:** L273714-01, -02, -03, -04, -05, -06, -07, -08, -09

**Sample Date:** 12/13/2006

**Extraction Date:** 12/19/2006

**Analysis Date:** 12/23/2006

**Instrument ID:** SVGC18

**Analyst:** 82

**Analytic Batch:** WG280127

**EPA ID:** TN00003

#### Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	%	LCSD	%	Control	%	Control		
	Rec		Rec		Rec	Limits	Qualifier	RPD	Limits	Qualifier
PCB 1260	0.00200	0.00161	80.5	0.00180	90.0	48-105		11	20	
PCB 1260	0.00200	0.00188	93.9	0.00196	97.9	46-113		4.2	20	

## **Acronyms**

## ACRONYMS

ASL	above sea level
ASTM	American Society for Testing and Materials
AWQC	Ambient Water Quality Criteria
BGS	below ground surface
BMP	best management practices
COI	contaminant of interest
CSM	Conceptual Site Model
CSO	combined sewer outfall
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EPA	U.S. Environmental Protection Agency
I.D.	identification
JSCS	Joint Source Control Strategy
MCL	maximum contaminant level
mg/Kg	milligrams per kilogram
mg/L	milligrams per liter
NPS	non-point source
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PEC	probable effects concentration
PRG	preliminary remediation goal
SCE	Source Control Evaluation
SCP	Source Control Plan
SLV	screening level value
SQV	sediment quality values
SWPCP	Stormwater Pollution Control Plan
TAL	target analytes list
TCLP	Toxicity Characteristic Leaching Procedure
TOC	total organic carbon
TSS	total suspended solids
µg/L	micrograms per liter
VCP	Voluntary Cleanup Program
XPA	Expanded Preliminary Assessment